IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

ALFONSO CIOFFI, MELANIE ROZMAN, MEGAN ROZMAN, MORGAN ROZMAN, *Plaintiffs*, v. GOOGLE LLC, *Defendant*.	§ § § § § § § § § § § § §	CIVIL ACTION NO. 2:13-CV-00103-JRG

ORDER AND MEMORANDUM OPINION REGARDING DEFENDANT'S RULE 50(B) MOTIONS BASED ON 35 U.S.C. § 251 AND THE RULE AGAINST RECAPTURE SUPPORTED BY FINDINGS OF FACT AND CONCLUSIONS OF LAW

The Court held a jury trial in this case from February 6 to 10, 2017. (Dkt. Nos. 255–58, 261). At the conclusion of the trial, the jury returned a unanimous verdict finding that the patents asserted by Plaintiffs Alfonso Cioffi, Melanie Rozman, Megan Rozman, and Morgan Rozman (collectively, "Plaintiffs") against Defendant Google Inc. ("Google") were infringed and not invalid. (Dkt. No. 259). After the trial, Google filed a Motion for Post-Trial Relief on Invalidity Under 35 U.S.C. §§ 102, 103 and 251, seeking either entry of judgment as a matter of law under Fed. R. Civ. P. 50(b) or the granting of a new trial pursuant to Fed. R. Civ. P. 59 (the "Motion"). (Dkt. No. 292). The Court granted-in-part Google's Motion as to the issue of invalidity pursuant to 35 U.S.C. § 251 on March 29, 2018, and ordered that the § 251 issues be adjudicated to the bench. (Dkt. No. 319). The Court now separately issues the following Findings of Fact ("FF") and Conclusions of Law ("CL") addressing Google's § 251 defenses. After careful consideration

of the evidence and the parties' arguments, and for the reasons set forth herein, the Court concludes that Google has not shown by clear and convincing evidence that U.S. Reissue Patent Nos. RE43,500 (the "'500 Patent"), RE43,528 (the "'528 Patent"), and RE43,529 (the "'529 Patent") (collectively, the "Asserted Patents") are invalid under 35 U.S.C. § 251. Accordingly, the Motion as to § 251 is **DENIED**.

I. FINDINGS OF FACT

A. The Parties

[FF1] Plaintiff Alfonso J. Cioffi ("Mr. Cioffi") and the late Allen F. Rozman ("Mr. Rozman") (collectively, "Inventors" or "Applicants") are co-Inventors of U.S. Reissue Patent Nos. RE43,500 (the "'500 Patent"), RE43,528 (the "'528 Patent"), and RE43,529 (the "'529 Patent") (collectively, the "Asserted Patents"), which reissued from U.S. Patent No. 7,484,247 (the "'247 Patent"). *See* PTX-001 ('247 Patent); PTX-002 ('529 Patent); PTX-003 ('500 Patent); and PTX-004 ('528 Patent). Mr. Cioffi lives in Murphy, Texas. (Dkt. No. 1 ¶ 1).

[FF2] Plaintiffs Melanie Rozman, Morgan Rozman, and Megan Rozman (the "Rozmans") are the daughters of the late Mr. Rozman. (*Id.* ¶¶ 5–7). The Rozmans each live in Murphy, Texas. (*Id.* ¶¶ 5–7).

[FF3] Mr. Cioffi and the Rozmans are the joint and one hundred percent (100%) owners of the Asserted Patents. (*Id.* ¶ 8).

[FF4] Google is a Delaware Corporation having its principal place of business at 1600 Amphitheater Parkway, Mountain View, California 94043. (Dkt. No. 1 ¶ 9; Dkt. No. 8 ¶ 9).

B. Procedural History

[FF5] On February 5, 2013, Plaintiffs sued Google for patent infringement. (Dkt. No. 1). Plaintiffs alleged that Google infringed the Asserted Patents based on features of Google's

Chrome web browser. (*See id.* ¶¶ 15–26; *see also* Dkt. Nos. 179, 183 (narrowing this case to the Asserted Patents)).

[FF6] Each of the Asserted Patents is titled "System and Method for Protecting a Computer System from Malicious Software" and is a reissue patent derived from U.S. Patent No. 7,484,247 ("the '247 Patent"). *See* PTX-001 ('247 Patent); PTX-002 ('529 Patent); PTX-003 ('500 Patent); PTX-004 ('528 Patent). The '247 Patent issued from U.S. Patent Application No. 10/913,609 (the "'609 Application"). PTX-001 at 1.

1. Relevant Claim Construction

[FF7] On August 28, 2014, the Court construed the term "web browser process," as recited in the claims of the Asserted Claims, to mean a "process that can access data on websites." (Dkt. No. 71 at 15). The Court's construction also explained that the "'web browser process' must be capable of accessing a website without using another web browser process." (*Id.* at 14).

[FF8] On November 26, 2014, Plaintiffs filed a stipulation and proposed final judgment of non-infringement based in part on the Court's construction of "web browser process." (Dkt. No. 99). The Court entered the proposed judgment on December 2, 2014. (Dkt. No. 104).

[FF9] Plaintiffs appealed the Court's claim construction of "web browser process" to the Court of Appeals for the Federal Circuit. (Dkt. No. 105.) The Federal Circuit agreed with the Court's construction of "web browser process" as a "process that can access data on websites" but clarified the construction by noting that the "'web browser process' alone does not have a 'direct' access capability requirement." *Cioffi v. Google, Inc.*, 632 F. App'x. 1013, 1021–22 (Fed. Cir. 2015). The Federal Circuit remanded this case for further proceedings pursuant to its guidance. *Id.* at 1023–24. (*See also* Dkt No. 200 (Joint Pre-Trial Order) § V.D. (Stipulated Claim Construction)).

2. Jury Trial

[FF10] On remand from the Federal Circuit, the parties proceeded through discovery, pretrial practice, and trial.

[FF11] A jury trial was conducted from February 6 to 10, 2017. (Dkt. Nos. 263–273). Plaintiffs asserted four claims of the Asserted Patents at trial: Claim 43 of the '500 Patent; Claims 5 and 67 of the '528 Patent; and Claim 49 of the '529 Patent (collectively, the "Asserted Claims").

[FF12] Google did not use the full 12 hours allotted to present its case to the jury. (*See* Dkt. No. 297 at 3 (admitting that "Google did not use its full 12 hours")).

[FF13] On February 10, 2017, the jury returned a unanimous verdict finding that the Asserted Claims were infringed and not invalid. (Dkt. No. 259). As to invalidity, the jury found that Google did not prove by clear and convincing evidence: (1) invalidity of Claim 67 of the '528 Patent as anticipated, as violating the rule against recapture, or as violating the original patent requirement; (2) invalidity of Claim 43 of the '500 Patent as obvious, as violating the rule against recapture, or as violating the original patent requirement; (3) invalidity of Claim 5 of the '528 Patent as obvious, or as violating the original patent requirement; or (4) invalidity of Claim 49 of the '529 Patent as obvious, or as violating the original patent requirement. (*Id.*)

[FF14] On September 15, 2017, the Court entered Final Judgment in accordance with the jury's verdict. (Dkt. No. 308).

3. Rule 50(a) Motions

[FF15] Before the jury was charged, Google filed a Motion for Judgment as a Matter of Law under Fed. R. Civ. P. 50(a). (Dkt. No. 251). Google argued, among other things, that since "[t]wo asserted claims violate the recapture rule[] and all [asserted claims] violate the original-patent requirement[,] [a]ll [Asserted Claims] are thus invalid under § 251." (*Id.* at 4). As to the

original patent requirement, Google argued that the Asserted Claims "cover[ed] subject matter that was not disclosed in the '247 patent's specification" on four grounds: (1) "Two of the asserted reissue claims now operate on a single processor or processor core"; (2) "All of the asserted claims require both a first and a second 'web browser process'; (3) "asserted claims require passing network data from the first to the second web browser process"; and (4) "asserted claim 49 of the '529 patent requires the first web browser process to open or initialize the second web browser process." (*Id.* at 6).

[FF16] The Court subsequently provided Google with an opportunity to present its § 251 defenses outside the presence of the jury. (*See* Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 122:9–11, 131:18–134:22 ("Counsel, the Court will now entertain motions under Rule 50(a) of the Federal Rules of Civil Procedure. . . . Let me hear anything that falls under Section 251. . . ."); *see also Biscotti Inc. v. Microsoft Corp.*, No. 2:13-cv-01015, Dkt. No. 310 at 1 (E.D. Tex. Oct. 3, 2017) ("After the close of evidence, and while the jury was deliberating, the Court provided the parties an opportunity to present evidence and argument in support of and in opposition to, as appropriate, any equitable defenses urged by Microsoft."); *Eidos Display, LLC v. Chi Mei Innolux Corp.*, No. 6:11-cv-201, Dkt. No. 895 at 1 (E.D. Tex. Dec. 28, 2017) ("[A]fter both sides finished presenting evidence to the jury and before the Court submitted to the jury those issues proper for its consideration, the Court conducted a bench trial outside the presence of the jury on [defendant]'s equitable estoppel defense.").

[FF17] However, Google did not offer any evidence or argument related to its third and fourth original patent requirement grounds under § 251. (*Compare* Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 131:17–132:12 ("Google moves for invalidity under 35 U.S.C. Section 251 that Claim 43 of the '500 patent and Claim 67 of the '528 patent are invalid because the Plaintiffs recaptured

surrendered claim scope, and these claims are not directed to overlooked aspects . . . . Google also moves for judgment as a matter of law that all asserted claims are invalid under 35 U.S.C. [§ 251] and the original patent requirement, including at least because, number one, for Claim 43 of the '500 patent and Claim 67 of the '528 patent, original '247 patent does not clearly and unequivocally disclose a single-core processor. And number two, the original '247 patent does not clearly and unequivocally disclose a first web browser process with access to a network.") *with* Dkt. No. 251 at 6 (identifying four asserted invalidity grounds under the original patent requirement of § 251)).

4. Rule 50(b) Motions

[FF18] After acceptance of the verdict and entry of judgment, Google filed a Motion for Post-Trial Relief on Invalidity under 35 U.S.C. §§ 102, 103, and 251, seeking either entry of judgment as a matter of law under Fed. R. Civ. P. 50(b) or a new trial pursuant to Fed. R. Civ. P. 59. (Dkt. No. 292). Google argued, among other things, that a new trial should be granted on all issues because the § 251 issues—that is, invalidity under the rule against recapture and original patent requirement—should not have been presented to and decided by the jury. (*Id.* at 2–20). Specifically, Google argued that Claim 43 of the '500 Patent and Claim 67 of the '528 Patent violated the rule against recapture by improperly recapturing surrendered subject matter of a system with just one processor. (*Id.* at 6–14) Google also argued that the Asserted Claims violated the original patent requirement under § 251 because the '247 Patent specification does not clearly and unequivocally disclose: (1) the limitations of all the Asserted Claims requiring two or more "web browser processes"; (2) the limitations of Claim 43 of the '500 Patent and Claim 67 of the '528 Patent encompassing an embodiment with only one processor; (3) the limitations of Claim 43 of the '500 Patent, Claim 67 of the '528 Patent, and Claim 49 of the '529 Patent requiring that

a "first web browser process" pass data to a "second web browser process"; and (4) the limitations of Claim 49 of the '529 Patent requiring a "first web browser process" to initialize a "second web browser process." (*Id.* at 14–20).

[FF19] On March 29, 2018, the Court granted-in-part Google's motion for a new trial and ordered that final judgment be vacated, the jury verdict be preserved except as to invalidity under § 251, and that the § 251 invalidity issues be adjudicated before the bench. (Dkt. No. 319).

C. Trial Witnesses

[FF20] The Court finds the witnesses' live testimony in this case credible, including that of Mr. Cioffi, Dr. Aviel Rubin, Dr. Hubert Dunsmore, Dr. William Arbaugh, and Dr. Michael Kogan.

[FF21] Mr. Cioffi testified at trial as a fact witness and was precluded from offering expert opinions. (*See* Dkt. No. 217 (Order on Motions *in Limine*) at 5 ("Exclude fact/lay witnesses from offering opinions regarding whether or not any accused product or asserted prior art reference reads on the asserted claims. To be clear, Mr. Alfonso Cioffi . . . . may not reference any specific patent claims or offer any infringement analysis for specific claims or limitations as part of his testimony")).

[FF22] Google's expert—Dr. Michael Kogan ("Dr. Kogan")—and Plaintiffs' expert—Dr. Hubert Dunsmore ("Dr. Dunsmore")—each testified on, among other things, invalidity under 35 U.S.C. § 251—including both the rule against recapture and the original patent requirement. (*See* Dkt. Nos. 268 (Trial Tr. 2/8/17 pm), 270 (Trial Tr. 2/9/17 am), 271 (Trial Tr. 2/9/17 pm)).

[FF23] Dr. William Arbaugh ("Dr. Arbaugh") testified on behalf of Google on the issues of invalidity under 35 U.S.C. §§ 102 and 103, including general technical issues. (*See* Dkt. No. 268 (Trial Tr. 2/8/17 pm) at 52:8–18).

[FF24] The Court further finds the experts proffered by the Plaintiffs and by Google were qualified to offer the expert testimony that they provided in this case.

D. Disclosure of the '247 Patent

[FF25] The '247 Patent discloses a security architecture for protecting a computer system from malicious software. *See* PTX-001 at 1:6–7, 2:1–2. The '247 Patent explains that with the growing usage of the Internet and networked services, "malicious software generally known a[s] malware" had emerged as a significant threat to computer users. *Id.* at 3:46–47. When downloaded to a user's computer, malware "interferes with the smooth operation of the computer system, and in the extreme, can lead to the unauthorized disclosure of confidential information stored on the computer system, significant degradation of computer system performance, or the complete collapse of computer system function." *Id.* at 3:57–62.

[FF26] Figure 1 below depicts this architecture in a "computer system 100," which may be a "personal computer (PC) system, a server, a portable computer, such as a notebook computer, or any data processing system, a personal digital assistant (PDA), [or] a communication device such as a cell phone." *Id.* at Fig. 1, 9:30–37.

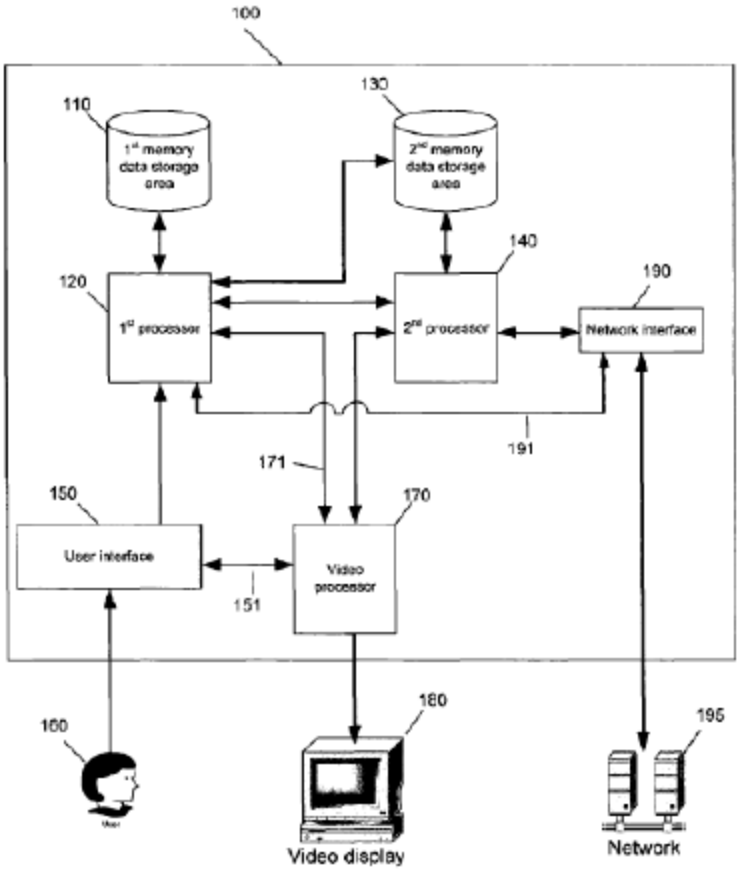


Fig. 1

[FF27] The '247 Patent specification teaches that the computer system 100 includes: (1) "a first processor 120 (P1)" connected to a "first memory and data storage area 110 (M1)" and (2) a "second processor 140 (P2)" connected to a "second memory and data storage area 130 (M2)." *Id.* at 9:37–39, 10:29–37. P1 may be physical hardware processor:

> P1 100 may comprise, for example, a microprocessor, such as a Pentium® 4 processor, manufactured by the Intel Corporation, or a Power PC® processor, manufactured by the IBM Corporation. Other electronic data processors manufactured by other companies, including but not limited to electronic data processors realized in Application Specific Integrated Circuits (ASICs) or in Field Programmable Gate Arrays (FPGAs), are within the spirit and scope of the present invention.

Id. at 9:39–47. Likewise, "second processor 140 (P2) . . . may comprise any electronic data processor, such as the devices previously described as applicable to first processor 120." *Id.* at 10:31–34.

E. Google's § 251 Invalidity Grounds

[FF28] Google identified 35 U.S.C. § 251 as a defense in its pre-trial statement. (Dkt. No. 18-1 ¶¶ 22, 120).

[FF29] Google alleges four grounds of invalidity under the original patent requirement of § 251. (*See* Dkt. No. 292 at 15–20). *See also* FF ¶ 15.

[FF30] Google also alleges one invalidity ground under the rule against recapture of § 251. (*See* Dkt. No. 292 at 6–14). *See also* FF ¶ 15.

1. Facts Relevant to Google's Original Patent Requirement Defense

a. Two or More "Web Browser Processes" Limitation of the Asserted Claims

[FF31] The originally issued claims of the '247 Patent recited two "logical processes": (1) a "first logical process," and (2) a "second logical process." PTX-001 at Claims 1–20.

[FF32] All four Asserted Claims replace the two "logical processes" limitations as claimed in the '247 Patent with limitations requiring two "web browser processes." *See* PTX-003 at Claim 41; PTX-004 at Claim 1; PTX-002 at Claim 36. In particular, each Asserted Claim recites a "first web browser process" and a "second web browser process." PTX-003 at Claim 41; PTX-004 at Claim 1; PTX-002 at Claim 36.

[FF33] Asserted Claim 43 of the '500 Patent depends from independent Claim 41, which recites:

> 41. A computer program product comprising a program code stored in a non-transitory computer readable medium operable on a portable computer and communication device capable of executing instructions using a common operating

system and having at least one electronic data processor communicatively coupled to a first memory space with at least one system file and a second memory space, the portable computer and communication device including a network interface device configured to exchange data across a network of one or more computers using a wireless connection, and an intelligent cellular telephone capability with a secure web browser including ***a first web browser process and a second web browser process***, configured to:

open the ***first web browser process*** within the common operating system, wherein the first web browser process is capable of accessing data of a website via the network and accessing data contained in the first memory space;

open the ***second web browser process*** within the common operating system on command from the ***first web browser process***, wherein the ***second web browser process*** is capable of accessing data contained in the second memory space and is further capable of generating data;

pass data from the ***first web browser process*** to the ***second web browser process***; and process data from the ***second web browser process***;

wherein the at least one system file residing on the first memory space is protected from corruption by a malware process downloaded from the network and executing as part of the ***second web browser process***.

PTX-003 at Claim 41 (emphasis added).

[FF34] Asserted Claim 5 of the '528 Patent depends from independent Claim 1, which recites:

1. A method of operating a computer system capable of exchanging data across a network of one or more computers and having at least a first and second electronic data processor capable of executing instructions using a common operating system, comprising:

executing a ***first web browser process***, capable of accessing data of a website via the network, in a first logical process within the common operating system using the first electronic data processor, wherein the first logical process is capable of accessing data contained in a first memory space;

executing a ***second web browser process*** in a second logical process within the common operating system using the second electronic data processor, wherein the second logical process is capable of accessing data contained in the second memory space; and

displaying data from the first logical process and the second logical process, wherein a video processor is adapted to combine data from the first and second logical processes and transmit the combined data to a display;

wherein the computer system is configured such that the second electronic data processor is operating in a protected mode and data residing on the first memory space is protected from corruption by a malware process downloaded from the network and executing as part of the ***second web browser process***.

PTX-004 at Claim 1 (emphasis added).

[FF35] Claim 67 of the '528 Patent depends from independent Claim 64, which recites:

> 64. A computer program product comprising a program code stored in a non-transitory computer readable medium operable on computer capable of executing instructions using a common operating system and having at least one electronic data processor communicatively coupled to a first and second memory space and to a network interface device configured to exchange data across a network of one or more computers and access at least one website, configured to:
>
> store at least one system file within the first memory space;
>
> open a ***first web browser process***, capable of accessing data of the at least one website via the network, in a first logical process, the first logical process being configured to access data contained in the first memory space;
>
> open a ***second web browser process*** in a second logical process, the second logical process being configured to access data contained in the second memory space; and
>
> pass data from the ***first web browser process*** to the ***second web browser process***, wherein the at least one system file residing on the first memory space is protected from corruption by a malware process downloaded from the network and executing as part of the ***second web browser process***.

Id. at Claim 64 (emphasis added).

[FF36] Asserted Claim 49 of the '529 Patent depends from independent Claim 36, which recites:

> 36. A method of operating a portable computer based system employing a common operating system and configured with a first memory space and a second protected memory space and at least one electronic data processor, comprising:
>
> storing at least one system file within the first memory space;
>
> downloading website content potentially containing malware from a network of one or more computers using a secure web browser process, wherein the secure web browser process is configured to execute on the at least one electronic data processor, and comprises ***a first web browser process*** and at least ***one second protected web browser process***, the ***first web browser process*** and the at least one ***second protected web browser process*** being configured to access the website content via the network of one or more computers;
>
> executing instructions in the ***first web browser process***, wherein the ***first web browser process*** is configured to access data contained in the first memory space and to initialize the at least one ***second protected web browser process***;
>
> passing data from the ***first web browser process*** to the at least one ***second protected web browser process***;
>
> passing data from the ***first web browser process*** to the at least one ***second protected web browser process***;

> executing instructions in the at least one ***second protected web browser process***, wherein the at least one ***second protected web browser process*** is configured to access data contained in the second protected memory space and to execute instructions from the downloaded website content, wherein the downloaded website content is capable of accessing the second protected memory space but is denied access to the first memory space;
>
> displaying digital content generated by the secure web browser process;
>
> wherein the secure web browser process is configured such that the at least one system file residing on the first memory space is protected from corruption by website content potentially containing malware downloaded from the network and executing as part of the at least one ***second protected web browser process***.

PTX-002 at Claim 36 (emphasis added).

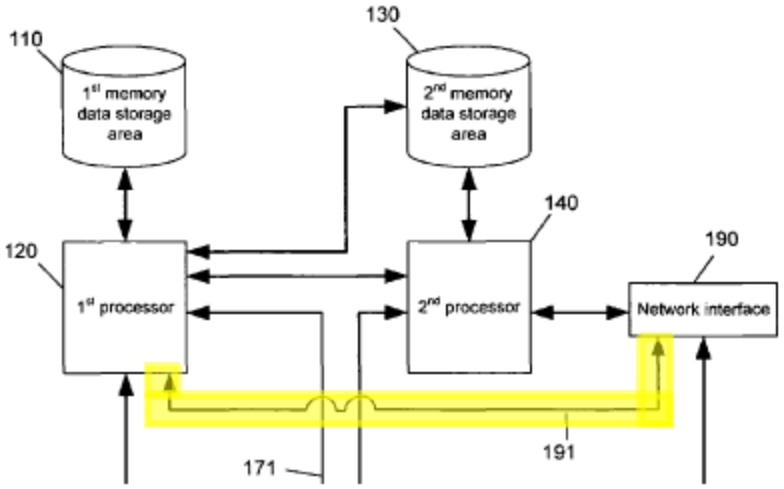
[FF37] The '247 Patent specification discloses the use of "logical processes." *See, e.g.*, PTX-001 at 16:34–43. The specification identifies a number of exemplary functions carried out by such logical processes: "executing instructions," PTX-001 at 7:64–65, 8:2–3; "accessing data contained in a first memory space and a second memory space," PTX-001 at 7:65–67; "exchanging data across a network of one or more computers," PTX-001 at 8:5–6; providing data for display, PTX-001 at 8:8–10; "a malware program" executing as part of a logical process, PTX-001 at 8:15–17; "executing instructions necessary to carry out the functions of an operating system," PTX-001 at 16:25–27; "executing instructions necessary to carry out a first computer program, including but not limited to a word processor," PTX-001 at 16:27–30; "executing instructions necessary to carry out the functions of a web browser program," PTX-001 at 16:30–32; and "executing instructions necessary to carry out the functions of an instant messenger program," PTX-001 at 16:32–34.

[FF38] The '247 Patent specification also discloses that "the functions carried out by processors 920 and 940 may comprise separate, secure logical processes executing on the same physical processor." PTX-001 at 16:22–24. The specification teaches that "[a] computer system 100 constructed in accordance with the principles of the present invention would be capable of

disallowing a secure logical process, such as the ***second logical process*** described above, access to certain memory spaces, and/or disallowing a secure logical process from initiating access to another logical process." PTX-001 at 16:34–39 (emphasis added). The specification continues: "For example, the functions carried out by P2 140 (FIG. 1) may comprise a secure logical process, which may be configured to be unable to automatically initiate access to either M1 110 or another ***logical process performing the functions of P1*** 120." PTX-001 at 16:39–43.

[FF39] Additionally, Processors P1 and P2 described in Column 14 of the '247 Patent specification refer back to elements 120 and 140 of Figure 1. *See* FF ¶¶ 25–27. (*See also* Dkt. No. 292 at 19 (Google's JMOL Motion) (arguing that "both P1 and P2 refer back to elements 120 and 140 in Figure 1"); Dkt. No. 268 (Trial Tr. 2/8/17 pm) at 145:5–10 (Testimony of Dr. Kogan) ("Figure 6 is a different thing. As we can see in the text that's blocked here, Figure 6 is about online gaming carried out on computer system 100. Now, the computer system 100, that's the two processor/two memory space thing we keep seeing in Figure 1."); Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 37:23–25 (Testimony of Dr. Dunsmore) ("Q: So Figure 6 describes using the processors 120 and 140 of Figure 1, right? A: Yes.")).

[FF40] Figure 1 of the '247 Patent discloses a first processor P1 120 with direct access to the network interface via item 191:



PTX-001, Fig. 1 (highlighting added).

[FF41] Further, Google concedes that "web browser processes" are a narrower sub-species of "logical processes" as described throughout the specification. (*See* Dkt. No. 292 at 11 (arguing that "by broadly reciting 'logical processes,' the originally filed '247 Patent claims indisputably encompassed web browser processes, including a first web browser process"); *id.* at 12 (arguing that "[c]hanging the originally filed claims of the '247 Patent to recite a 'first web browser process' requires revising only one term, 'first logical process,' to a 'first web browser process.' This change is minor given that ***a 'web browser process' is a type of 'logical process.***'") (emphasis added)).

[FF42] Google's invalidity expert also explained that logical processes encompass web browser processes. (*See* Dkt. No. 268 (Trial Tr. 2/8/17 pm) at 67:21–68:4 ("Q: What about the first logical process. . . . Where is that? A: It's the same as the first web browser process. . . . A web browser process is going to be a logical process. . . . It's the way the computer works. It starts processes. And a web browser process would be a logical process.") (Testimony of Dr. Arbaugh)).

[FF43] Dr. Dunsmore testified, consistent with Dr. Arbaugh's explanation, that "a logical process could be just about anything. It could be a process that was running, working with

a gaming system. It could be a process that's running working with email. It could be a ***process working with web browsers***." (Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 12:16–13:2 (Testimony of Dr. Dunsmore)). When asked about the types of programs that would be included as "secure logical processes," Dr. Dunsmore testified that Column 16 of the '247 Patent specification discloses to a person of ordinary skill in the art "that there could be . . . a number of things that could be done by these processes. And among those would be . . . processes that are part of a web browser. So the specification specifically talks about . . . a web browser program and processes that work with that." (Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 6:24–9:1).

[FF44] As such, Dr. Dunsmore explained that those skilled in the art reading Column 14 would understand that P1 and P2 can refer to two processes, both of which are accessing data from the Internet, which thus meet the Court's construction of "web browser process"—*i.e.*, a process that can access data on websites. (*See id.* at 9:21–10:21 ("Here we have two processes, P1 and P2. And both of them are retrieving data from the network, and that's exactly what needs to be done by the processes of a web browser. Q: And does P1 and P2 accessing website data meet . . . the Court's definition of what a web browser process is? A: Yes, it does.")).

[FF45] Dr. Dunsmore also explained that Column 16 of the '247 Patent specification would disclose to a person of skill in the art the various types of processes that could be executed in a secure logical process, including the "functions of a web browser program." (*Id.* at 7:14-8:9 ("Q: Professor Dunsmore, how would a person of ordinary skill understand or interpret these disclosures that we've just looked at in column 16? A: Well, a person of ordinary skill would realize that there could be . . . a number of things that could be done by these process [*sic*]. And among those would be . . . processes that are part of a web browser.")).

[FF46] However, Dr. Dunsmore also noted at trial that the term "web browser process" is never used in the '247 Patent specification to describe Figure 6. (*Id.* at 38:1–6). Although the '247 Patent specification does not expressly refer to two instances of "web browser" or "browser" programs in describing the claimed invention, the Court notes that the '247 Patent specification explains that prior art solutions "could significantly slow or preclude the ***interactive nature of many applications such as*** gaming, messaging, and ***browsing***." PTX-001 at 6:16–20.

[FF47] As further stated in the '247 Patent specification, the "interactive network process" embodiment describes P1 120 connecting to the "network," PTX 001 at 14:23–24, which is defined as the "Internet, a LAN, WAN, VPN, etc.," *id.* at 10:5–7.

[FF48] Google's expert, Dr. Kogan, disputed Dr. Dunsmore's opinion and testified that the embodiment disclosed in Figure 6 and Column 14 of the '247 Patent was limited to "online gaming." (Dkt. No. 268 (Trial Tr. 2/8/17 pm) at 145:1–23). Dr. Kogan's opinion was that there was no disclosure of web browser processes in the '247 Patent specification:

> A: . . . Well, Figure 6 kind of goes along with some text that's in the specification. There's a bunch of text that talks all about that Figure 1, and you've heard people talking about that. And that ***Figure 1 is about browsing the Internet. Figure 6 is a different thing. As we can see in the text that's blocked here, Figure 6 is about online gaming carried out on computer system 100***. Now, the computer system 100, that's the two processor/two memory space thing we keep seeing in Figure 1. So this is just a use case of how that works with respect to running games. So, you know, you're – I'm sure you've had kids or grandkids or – they're all playing Call of Duty and games with their friends, and you can't get the headphones off their heads.
>
> Q: How does Figure 6 relate to web browsers?
>
> A: Well, ***Figure 6 doesn't relate to web browsers because games deal with game servers on the Internet.*** There's a lot of stuff on the Internet, and everything on the Internet is not a website. And everything that comes and goes on the Internet is not website data. So when you have a game running on your computer, your game is talking to a specific game server, and that game server is providing you game data, not website data.

(*Id.*). Dr. Kogan testified that many types of data are exchanged over the Internet, not just website data for web browsing. Thus, Dr. Kogan's expert opinion was that processes that access "interactive network process status data" from a network are not accessing "website data" and cannot fit the Court's definition of "web browser process." (*Id.*).

[FF49] Figure 6 refers to the broader "interactive network process" and denotes "interactive network process status data" being received from the network connection (step 620), the first process on P1 receiving the "interactive network process status data" from P2 (step 640), and that the "updated interactive network process status data" is passed back to the network via the network connection (step 660). PTX-001, Figure 6. Online gaming is never mentioned in Figure 6, which instead refers more broadly to an "interactive network process." *Id.* The specification also makes clear that online gaming is just one example of an "interactive network process" described in Figure 6. (*Id.*, at 14:3-4, 14:28-30).

b. "One Processor" Limitation of Claim 43 of the '500 Patent and Claim 67 of the '528 Patent

[FF50] Asserted Claim 43 of the '500 Patent depends from independent Claim 41, which recites in relevant part: "A computer program product . . . having ***at least one electronic data processor*** communicatively coupled to a first memory space with at least one system file and a second memory space. . . ." FF ¶ 33 (emphasis added).

[FF51] Asserted Claim 67 of the '528 Patent depends from independent Claim 64, which recites in relevant part: "A computer program product . . . having ***at least one electronic data processor*** communicatively coupled to a first and second memory space. . . ." FF ¶ 35 (emphasis added).

[FF52] Both parties' experts testified at trial that these two Asserted Claims require only one processor. (Dkt. No. 268 (Trial Tr. 2/8/17 pm) at 148:2–22 (Testimony of Dr. Kogan); Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 33:8–25 (Testimony of Dr. Dunsmore)).

[FF53] The parties' experts also agreed that although two processor cores may be on a single processor chip, each processor core still constitutes a separate processor. (Dkt. No. 264 (Trial Tr. 2/7/17 am) at 51:5–16; Dkt. No. 268 (Trial Tr. 2/8/17 pm) at 148:2–10).

[FF54] Although Figure 1 of the '247 Patent specification depicts the first processor P1 120 and second processor P2 140 as physically separate data processors, PTX-001 at Fig. 1, Figure 9 depicts an alternative embodiment using a single, physical processor chip:

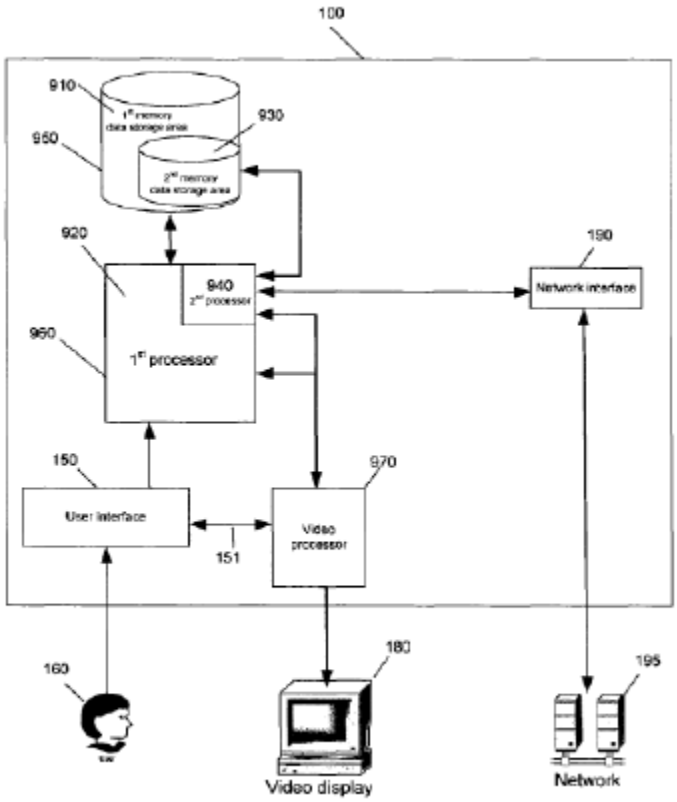


Fig. 9

PTX-001 at Fig. 9.

[FF55] Column 16 of the '247 Patent specification explains: "In accordance with a preferred embodiment of the present invention, an alternate configuration for computer system 100 is illustrated in FIG. 9. Computer system 100 comprises a video processor 970, ***processor 960***, and a memory data storage area 950." PTX-001 at 16:8–10 (emphasis added).

[FF56] Column 16 of the '247 Patent specification further discloses: "Processor 960 ***may further*** comprise multiple processor cores, illustrated by 1st processor 920 and 2nd processor 940." *Id.* at 16:10–12. (emphasis added). Since "[m]icroprocessors manufactured with multiple processor cores are becoming common in the industry, and such multi-core processors may be particularly advantageous when used in accordance with the present teachings," the '247 Patent explains that "[i]t is understood that processor 960 may contain more than 2 processor cores." *See id.* at 16:12–17.

[FF57] Additionally, the '247 Patent specification teaches that "the functions carried out by processors 920 and 940 may comprise separate, secure logical processes executing on ***the same physical processor***." PTX-001 at 16:22–24 (emphasis added). The specification continues immediately thereafter with examples of embodiments of the invention implemented using two logical processes:

> For example, a first logical process may comprise ***executing instructions*** necessary to carry out the functions of an operating system, or the first logical process may comprise ***executing instructions*** necessary to carry out the functions of a first computer program, including but not limited to a word processor. A second logical process may comprise ***executing instructions*** necessary to carry out the functions of a web browser program, or may comprise executing instructions necessary to carry out the functions of an instant messenger program, for example. A computer system 100 constructed in accordance with the principles of the present invention would be capable of disallowing a secure logical process, such as the second logical process described above, access to certain memory spaces, and/or disallowing a secure logical process from initiating access to another logical process. For example, the functions carried out by P2 140 (FIG. 1) may comprise a secure logical process, which may be configured to be unable to automatically initiate access to either M1 110 or another logical process ***performing the functions of P1 120***.

PTX-001 at 16:24–34 (emphasis added).

[FF58] However, Dr. Dunsmore testified that the '247 Patent specification's teaching that "[p]rocessor 960 may further comprise multiple processor cores," FF ¶ 56, signals to those skilled in the art that the invention may be executed on multiple processor cores, but could also be executed on a single processor. (Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 6:24–7:11, 8:2–15 (opining that the "specification in the patent says that, in fact, instead of being separate processors, these can simply be separate processes that are executing on the same physical processor, a single processor. . . . [and that] the patent specification speaks to . . . both doing this on a single processor or on a multi-core processor")).

[FF59] Moreover, the Summary of the Invention never refers to physical processors, but instead notes that an "object of the present invention" is to provide a computer system capable of executing instructions in a "first logical process" and "second logical process," and that malware "downloaded from the network and executing as part of the second logical process is incapable of initiating access to the first memory space." PTX-001 at 7:63–8:19. This is described in column 16, which makes clear that the functions carried out by the processors "may comprise separate, secure logical processes." *Id.* at 16:23–24.

[FF60] The '247 Patent specification notes specifically that the functions of P1 120 in Figure 1 may be carried out by a first logical process, and the functions of P2 140 may be carried out by a second logical process:

> [a] computer system 100 constructed in accordance with the principles of the present invention would be capable of disallowing a secure logical process, such as the second logical process described above, access to certain memory spaces, and/or disallowing a secure logical process from initiating access to another logical process. For example, the functions carried out by P2 140 (FIG. 1) may comprise a secure logical process, which may be configured to be unable to automatically

> initiate access to either M1 110 or another logical process performing the functions of P1 120.

Id. at 16:34–43.

[FF61] Google's expert, Dr. Kogan, provided conclusory testimony—without reference to any portion of the intrinsic record of the '247 Patent—that the single processor limitation is not disclosed by the '247 Patent specification:

> Q. And finally, have you heard of something called the original patent rule?
> A. Yes, I have.
> Q. And have you reached any conclusions regarding that rule?
> A. Yes, I have. The original patent rule, as a result of it, the – the patents that the ***claims with one single processor are not supported by the specification***, and, therefore, by the original patent rule, they are invalid. ***Trust me***, the original patent rule is big and ugly, and I can't remember all the legal standards specifically, but it speaks to if the specification doesn't call out exactly what's being asked for, you can't have it. And so the original patent rule is – renders the two claims with a single processor invalid. . . .

(Dkt. No. 268 (Trial Tr. 2/8/17 pm) at 150:15–151:6). In post-trial briefing, Google argues that Figure 9 of the '247 Patent, which depicts two processors, informs the disclosure of Column 16 of the '247 Patent's specification and indicates that Column 16 does not clearly disclose a single processor embodiment. (Dkt. No. 292 at 17–19).

c. A First Web Browser Process Passing Data to a Second Web Browser Process Limitation of Claim 43 of the '500 Patent, Claim 67 of the '528 Patent, and Claim 49 of the '529 Patent

[FF62] Claim 43 of the '500 Patent depends from Claim 41, which recites in relevant part: "pass data from the first web browser process to the second web browser process." FF ¶ 33.

[FF63] Claim 49 of the '529 Patent depends from Claim 36, which recites in relevant part: "passing data from the first web browser process to the at least one second protected web browser process." FF ¶ 36.

[FF64] Claim 67 of the '528 Patent depends from Claim 64, which recites in relevant part: "pass data from the first web browser process to the second web browser process." FF ¶ 35.

[FF65] Google contends that Claim 43 of the '500 Patent, Claim 49 of the '529 Patent, and Claim 67 of the '528 Patent are invalid under § 251 for failure to disclose a first web browser process that passes and/or exchanges website data with the second web browser process. (Dkt. No. 292 at 23).

[FF66] Google submitted this § 251 invalidity ground in its Rule 50(a) motion on the papers and did not present oral argument to the Court. FF ¶¶ 15–17.

[FF67] Plaintiffs argue that Google waived this argument because it failed to offer evidence at trial on the question of whether a person of ordinary skill in the art would consider the "passing" or "exchanging" of website data between the first and second web browser processes as adequately disclosed. (Dkt. No. 295 at 12). Google admits that it did not present any expert testimony regarding this argument at trial. (Dkt. No. 320 at 3–4 (acknowledging that "[t]he record from the jury trial provides an incomplete record of extrinsic evidence on Google's § 251 invalidity defenses" and recognizing that "neither party presented separate extrinsic evidence on th[is original patent] defense[]")).

[FF68] Although Google "request[ed] that the parties be permitted to present evidence and live witness testimony at the bench trial to provide the Court with a complete record on which to decide § 251 invalidity" (Dkt. No. 320), the Court clarified that it did "not intend to conduct a new evidentiary hearing in this regard" because Google already had an opportunity to provide such evidence before the jury and the Court. (*See* Dkt. No. 327). *See also* FF ¶¶ 16–17.

[FF69] The Court finds that Figure 6 of the '247 Patent is a flow chart that discloses: (1) processor P2 retrieving "interactive network process" status data, (2) processor P2 passing the

data to processor P1, and (3) then processor P1 passing the updated "interactive network process status data" back to processor P2:

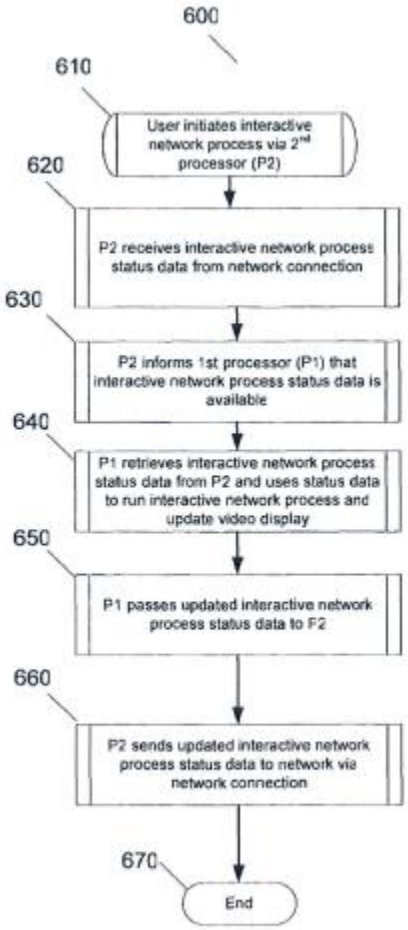


Fig. 6

PTX-001 at Fig. 6.

[FF70] When describing Figure 6, the '247 Patent specification notes that a "interactive network process" could be an "interactive game" but does not limits an "interactive network process" to online games. PTX-001 at 14:3–4 ("Interactive network process *such as* interactive gaming") (emphasis added); *id.* at 14:30–31 "allows an interactive network process, *such as* online gaming") (emphasis added).

[FF71] The '247 Patent specification makes a similar distinction between "interactive network process status data" and "game status data" or "game status information," signifying that "interactive network process status data" is broader than just "game status data." *See* PTX-001 at 14:49–51 ("By using *exemplary* process 600 (or an equivalent). . . . The 120-120 system *may* be advantageously configured to *only* accept game status information. . . .") (emphases added); *see also id.* at 14:28–31 ("In accordance with a preferred embodiment of the present invention, an *exemplary* process flow 600, illustrated in FIG. 6, allows an interactive network process, *such as* online gaming, to be carried out on computer system 100.") (emphasis added).

[FF72] Therefore, the Court views the specification of the '247 Patent as clearly disclosing the first and second processes, P1 and P2, exchanging "interactive network process status data" (PTX-001 at 14:28–45). The term "interactive network process" on its face includes web browser processes, which by definition interact with the network. The Court finds that, consistent with Figure 6, Column 14 of the '247 Patent specification discloses passing "interactive network process status data" from processor P1 to processor P2 and back to processor P1. *See* PTX-001 at 14:32–45; *see also* FF ¶ 69.

[FF73] Additionally, Plaintiffs' expert Dr. Dunsmore testified at trial with respect to Claim 43 of the '500 Patent, Claim 67 of the '528 Patent, and Claim 49 of the '529 Patent, that the "data" passed from the "first web browser process" to the "second web browser process" must be "website data." (Dkt. No. 270 (Trial Tr. 2/9/17 am) at 119:2–23). He testified that a POSITA would interpret P1 and P2 as "web browser processes" because both are capable of accessing website data. (Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 7:14–8:9, 9:21–10:21, 12:16–24, 67:21–68:4).

[FF74] This is consistent with Figure 1, which discloses a two-way communication arrow between P1 and P2. *Compare* FF ¶¶ 61–63 *with* PTX-001 at Fig. 1.

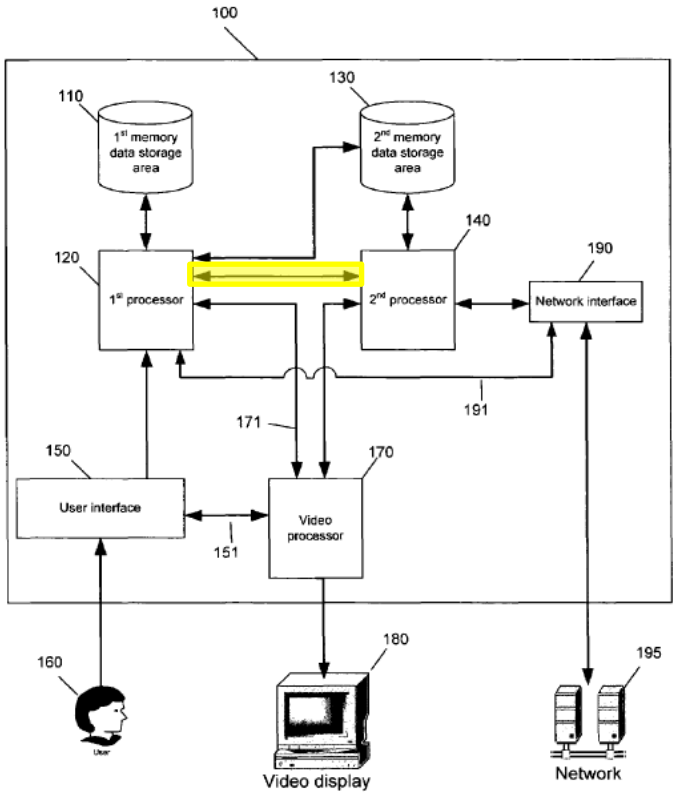


Fig. 1

PTX-001 at Fig. 1 (highlighting added).

[FF75] Dr. Dunsmore testified that a person of ordinary skill in the art would interpret P1 and P2 as "web browser processes" because both are capable of accessing website data. *See* FF ¶¶ 43–46.

d. A First Web Browser Process Initializing a Second Web Browser Process Limitation of Claim 49 of the '529 Patent

[FF76] Claim 49 of the '529 Patent recites an additional feature of the two "web browser processes," requiring that the "first web browser" "initialize" the "second web browser process." Specifically, Claim 49 depends from Claim 36 of the '529 Patent, which recites in relevant part: "executing instructions in the first web browser process, wherein the first web

browser process is configured to access data contained in the first memory space and ***to initialize the at least one second protected web browser process***." FF ¶ 36.

[FF77] Google submitted this § 251 invalidity ground in its Rule 50(a) motion on the papers and did not present oral argument to the Court. FF ¶¶ 15–17.

[FF78] Plaintiffs argue that Google waived this argument because it failed to offer evidence at trial on this issue. (Dkt. No. 295 at 13). Google admits that it did not present any expert testimony regarding this argument at trial. (Dkt. No. 320 at 3–4 (acknowledging that "[t]he record from the jury trial provides an incomplete record of extrinsic evidence on Google's § 251 invalidity defenses" and recognizing that "neither party presented separate extrinsic evidence on th[is original patent] defense[]")).

[FF79] Although Google "request[ed] that the parties be permitted to present evidence and live witness testimony at the bench trial to provide the Court with a complete record on which to decide § 251 invalidity" (Dkt. No. 320), the Court clarified that it did "not intend to conduct a new evidentiary hearing in this regard" because Google already had an opportunity to provide such evidence before the jury and the Court. (*See* Dkt. No. 327). *See also* FF ¶¶ 16–17.

[FF80] Figure 2 of the '247 Patent specification describes "(P1)" instructing "(P2)" to initiate a "protected process" and open one or more process windows (step 220). PTX-001 at Fig. 2. The discussion of Figure 2 discloses the user launching of a "protected process" such as Internet Explorer or Netscape Navigator. *Id.* at 10:64–11:2. A user inputs commands to launch the overall program. *Id.* at 11:2–4; *see also id.* at Fig. 2, step 210. The '247 Patent specification then describes "1st processor 120" (P1) instructing the "2nd processor 140" (P2) to initiate the protected process and open one or more process windows. *Id.* at 11:4–6. The specification further explains that the protected process may be "browsing the internet." *Id.* at 11:6–10.

[FF81] Figure 10 of the '247 Patent specification further discloses "1st processor (P1) instruct[ing] 2nd processor (P2) to initiate protected process and open process window." PTX-001, Fig. 10. The '247 Patent specification then describes Figure 10 as disclosing "processor P1 120 instruct[ing] processor P2 140 to initiate a protected process and open a process window." *Id.* at 17:16–18. The specification also explains that that the "method of operating a computer system involving data encryption" prior to sending data to processor P2 " as set forth in Figure 10 and described in Column 17 is "[i]n accordance with the present teachings" and "[i]n accordance with a preferred embodiment of the present invention." *See id.* at 17:11–13, 33–35.

[FF82] The Court finds that the '247 Patent specification (in the figures and in multiple places throughout the detailed description) discloses that processor P1 is capable of opening and/or initializing processes on processor P2. The specification further discloses that the functions carried out by processor P1 and processor P2 can also be carried out by, and referred to as, "logical processes." *See* FF ¶ 59–60. It is undisputed that "logical processes" can be any number of computer program processes including "web browser processes." *See* FF ¶¶ 37, 41–47. Additionally, the '247 Patent specification discloses a user opening a web browser program, followed by P1 instructing P2 to open one or more protected process windows for web browsing. FF ¶ 80–81.

2. Facts Relevant to Google's Recapture Defense

[FF83] At trial, Plaintiffs' expert Dr. Dunsmore agreed that the Claim 43 of the '500 Patent and Claim 67 of the '528 Patent encompass a single processor system, whereas the '247 Patent's issued claims do not. (Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 33:8–25.) Google's expert Dr. Kogan testified that the first step of the recapture is met. (Dkt. No. 268 (Trial Tr. 2/8/17 pm)

at 148:2–22). Plaintiffs did not dispute the first step of the recapture test in post-trial briefing. (*See* Dkt. No. 295 at 14–23).

a. Threshold Inquiry Regarding Overlooked Aspects of the '247 Patent

[FF84] While the '247 Patent describes a system that includes two processors, the original claims of the '247 Patent were not so limited. Originally filed Claim 1 of the '609 Application recited a method of operating a computer system with "a first logical process" and "a second logical process," but it did not specify how many *processors* the system included:

> 1. A method of operating a computer system, comprising the steps of:
> executing instructions in ***a first logical process***, wherein the first logical process is capable of accessing data contained in a first memory space and a second memory space;
> executing instructions in ***a second logical process***, wherein the second logical process is capable of accessing data contained in the second memory space, the ***second logical process being further capable of exchanging data across a network*** of one or more computers;
> . . .
> wherein the computer system is configured such that malware program downloaded from the network and executing as part of the ***second logical process*** is incapable of initiating access to the first memory space.

See PTX-007 at R00000587 (emphasis added).

[FF85] Similarly, originally filed Claim 15 of the '609 Application, reproduced in part below, recited executing a "first logical process" and "second logical process" on "at least one electronic data processor":

> 15. A computer system, comprising:
> ***at least one electronic data processor*** capable of executing instructions;
> . . .
> wherein the electronic data processor, first and second memory space, and video processor are configured for performing the steps of:
> executing instructions in a ***first logical process***, wherein the ***first logical process*** is capable of accessing data contained in the first memory space and the second memory space;
> executing instructions in a ***second logical process***, wherein the

> ***second logical process*** is capable of accessing data contained in the second memory space, the ***second logical process being further capable of exchanging data across a network*** of one or more computers;
> . . . .

Id. at R00000591 (emphasis added).

[FF86] Although the originally filed Claims 1 and 15 of the '609 Application recited a first logical process with access only to the first memory space and second memory space, the claims further recited a second logical process with access to the second memory space *and* that was capable of exchanging data across a network of computers. *See* FF ¶¶ 84, 85. Accordingly, the originally filed Claims 1 and 15 of the '247 Patent set forth a first and second logical process where only the second logical process had access to the network. (*See id.*)

[FF87] In contrast, the challenged reissue claims (Claim 43 of the '500 Patent and Claim 67 of the '528 Patent) contain a first and second *web browser* processes (not merely *logical* processes of any type), and thus by definition ***both*** processes require access to the network. *See* FF ¶¶ 33, 35; *see also* FF ¶¶ 7–9, 40–47.

[FF88] Google's expert, Dr. Arbaugh, opined that the original '247 Patent required a second processor to isolate the computer system from the network. (Dkt. No. 268 (Trial Tr. 2/8/17 pm) at 112:10–113:7). Additionally, Dr. Kogan, another Google expert, testified that the Asserted Patents (*i.e.*, the reissue patents) disclosed a different invention from the '247 Patent (the original patent), albeit he inconsistently couched his opinion as applying only for the original patent rule and not the rule against recapture. (Dkt. No. 268 (Trial Tr. 2/8/17 pm) at 30:5–31:5).

[FF89] Google argues that Dr. Dunsmore essentially conceded on cross-examination that, were the original filed-for claims read broadly enough, they could encompass a first logical process with access to the network (*i.e.*, a "web browser process"). (*E.g.*, Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 41:6–23). Such a reading, however, would eschew any reliance on the intrinsic

record and the critical context it provides—essentially reading the '247 Patent's claim language in a vacuum.

[FF90] Furthermore, the Court previously determined that "the essence of the invention claimed in the '247 Patent was isolation—only the second logical process could access the network; the rest of the system could not." (Dkt. No. 212 at 8 (Magistrate Judge's Report and Recommendation); *see also* Dkt. No. 226 (Order Adopting)). In contrast, the Court found that the Asserted Claims of the reissue patents are "directed to processes that occur on web browsers and thus are not related to isolation." (Dkt. No. 212 at 8; *see also* Dkt. No. 226). This conclusion is consistent with the Inventors' representations to the PTO to advance prosecution on the '609 Application. (*See* PTX-007 at R00000681 ("[T]he physical hardware separation or partitioning of instruction execution on physically separate processors (or processor cores), as taught by the Applicants, allows malicious instructions to be executed within the second logical process, using the second electronic data processor operating in a protected mode.").

[FF91] The Court also noted that determination of whether a reissue claim was patentably distinct over the original claims required consideration of whether the reissue claims were obvious in light of the original claims. (Dkt. No. 212 at 9). Neither party at summary judgment presented evidence on the issue of obviousness, and the Court denied Google's motion because of unresolved issues of fact. (*Id.* at 10). Notwithstanding the opportunity to present evidence on obviousness at trial, Google failed to do so.

[FF92] Additionally, the Court finds that Google's argument (for its original patent requirement challenge under § 251) to be a concession that reinforces the Court's prior conclusion that the Asserted Patents are in essence directed to a different invention than the original claims of the '247 Patent. (Dkt. No. 251 at 5–6 (Google's Rule 50(a) Motion) (arguing that "the invention

disclosed in the reissue patents is ***entirely different*** from the one disclosed in the original '247 Patent . . . [The] first logical process ran on the first processor and a second logical process ran on the second processor, and ***only the second process . . . was a network-interface program or browser***.") (emphasis added)).

b. Facts Relevant to the Recapture Test

[FF93] Originally filed Claim 1 of the '609 Application claimed a "first logical process" and "second logical process." FF ¶ 84.

[FF94] Originally filed Claim 15 of the '609 Application claimed "at least one electronic data processor" executing a "first logical process" and "second logical process." FF ¶ 85.

[FF95] During prosecution of the '609 Application, the PTO examiner rejected originally filed Claim 1 as anticipated by U.S. Patent No. 6,192,477 ("Corthell"). PTX-007 at R00000651–52. With respect to originally filed Claim 1, the examiner did not discuss whether Corthell discloses multiple processors, presumably because Claim 1 was not limited to a particular number of processors. *Id.* at R00000651; *see also* FF ¶ 84.

[FF96] During prosecution of the '609 Application, the PTO examiner also rejected the originally filed Claim 15 as obvious in view of U.S. Patent Nos. 6,578,140 ("Policard") and 5,673,403 ("Brown"). (PTX-007 at R00000656.) With respect to originally filed Claim 15, the examiner reasoned that since the claim could be interpreted to encompass a multiprocessor system executing on multiple operating systems, Claim 15 was obvious over Policard in view of Brown because Policard describes a system in which two processors operated in "dual, separate operating systems." *See id.* at R00000650, 656.

[FF97] On April 29, 2008, Plaintiffs responded by amending Claims 1 and 15 to recite at least two processors. Specifically, Plaintiffs amended Claim 1 of the '609 Application, reproduced in part below, to require "having at least a first and second electronic data processor":

> 1. (Currently Amended) A method of operating a computer system **having at least a first and second electronic data processor capable of executing instructions using a common** ~~*running an*~~ operating system, comprising the steps of:
>
> executing instructions in a first logical process within the **common** operating system **using the first electronic data processor**, wherein the first logical process is capable of accessing data contained in a first ~~*electronic*~~ memory space **and a second memory space**;
>
> executing instructions in a second logical process within the common operating system **using the second electronic data processor**, wherein the second logical process is capable of accessing data contained in ~~*a*~~ **the** second ~~*electronic*~~ memory space, the second logical process being further capable of exchanging data across a network of one or more computers;
>
> . . .
>
> wherein the computer system is configured such that **the second electronic data processor is operating in a protected mode and** data residing on the first ~~electronic~~ memory space is protected from corruption by a malware process downloaded from the network and executing ~~*on*~~ **as part of** the second logical process.

PTX-007 at R00000672 (amendments indicated).

[FF98] Likewise, Claim 15 of the '609 Application, reproduced in part below, was amended to require a "multi-processor" system with "a first and second electronic data processor":

> 15. (Currently Amended) A **multi-processor** computer system **using a common operating system**, comprising:
>
> at least **a first and second** ~~*one*~~ electronic data processor capable of executing instructions **using the common operating system**;
>
> . . .
>
> wherein the **first and second** electronic data ~~*processor*~~ **processors**, first and second memory space, and video processor are configured for performing the steps of:
>
> executing instructions in a first logical process **with the first electronic data processor**, wherein the first logical process is executing within **the common** ~~*an*~~ operating system and is capable of accessing data contained in the first memory space and the second memory space;
>
> executing instructions in a second logical process **with the second electronic data processor**, wherein the second logical process is executing within the **common** operating system and is capable of accessing data contained in the second memory space, the second logical process being further capable of

> exchanging data across a network of one or more computers;
>
> . . . .

Id. at R00000675–76 (4/29/2008 Amendment at 5–6); *see also id.* at R00000672.

[FF99] The Inventors relied on these amendments to traverse Corthell, Policard, and Brown. To distinguish Corthell, the Inventors argued that adding a "second electronic data processor" provides "physical isolation" between the first and second logical processes:

> As per claim 1, Examiner believes that Corthell discloses the Applicant's claimed invention. . . . ***Corthell teaches the use of a computer system using a single electronic data processor*** (Figure 1, [block 102]), utilizing a redirector (Figure 2, [block 214]) and filter (Figure 2, [block 216]) mechanism to protect against attacks by malware. ***Corthell, therefore, teaches the use of a single electronic data processor that is necessarily executing all instructions***. . . . While Corthell does teach partitioning of the memory space into a primary partition (Figure 2, [block 204]) and a protected partition (Figure 2, [block 206]), ***he does not teach or suggest the partitioning of "secure" and "unsecure" instruction execution onto separate electronic data processors.***
>
> ***In stark contrast, Applicants teach the use of a multi-processor computer having at least a first and second electronic data processor*** capable of executing instructions using a common operating system. . . . Such a configuration allows for a physical hardware separation or partitioning of instruction execution on physically separate processors (or processor cores), in contrast to Corthell's teaching of executing all instructions on a single electronic data processor. ***By physically separating the execution of trusted instructions*** (the operating system running on the first electronic data processor, for example) ***from untrusted network process instructions*** (a Java script downloaded for the internet, for example), a higher level of security may be achieved.

Id. at R00000679–80 (4/29/2008 Amendments/Remarks at 9–10) (emphasis added); *compare with* FF ¶¶ 84, 93.

[FF100] The Inventors made similar arguments as to the Policard and Brown references:

> Applicants understand the Examiners suggestion regarding independent claims 10 and 15, and have amended the claims to specify a computer system having at least a first and second electronic data processor capable of executing instructions ***using a common operating system***. Additionally, Applicants have incorporated elements of amended independent claim 1 . . . into the amended claims 10 and 15, further patentably distinguishing claims 10 and 15 from the teachings of Policard and Brown.

Id. at R00000685 (4/29/2008 Amendments/Remarks at 15) (emphasis added); *compare with* FF ¶¶ 85, 94.

[FF101] In issuing the Notice of Allowance for the '609 Application, the examiner accepted "the Applicant's argument that the prior art does not show a single operating system that executes on multiprocessors such that ***one processor handles processes from the Internet*** and other potentially malicious data in order ***to protect the file system on the other processors***." *Id.* at R00000709 (emphasis added). Thus, in order for the '247 Patent to issue, the Inventors added the second processor limitation—which added physical isolation of the first logical process—to distinguish the isolated and non-isolated processes of Corthell, Policard, and Brown, which execute on the same processor. The '609 Application—reciting at least two processors—issued as the '247 Patent on January 27, 2009. PTX-001 at 1.

[FF102] As to prosecution of the Asserted Claims (*e.g.*, of the reissue patents), Mr. Cioffi testified at trial that the Inventors intended to cover unclaimed embodiments that were originally disclosed in the'247 Patent specification. (Dkt. No. 263 at 97:24–98:6, 122:15–124:19.) In particular, the Inventors claimed "browser processes," whereby the first logical process was no longer isolated from the network. PTX-010 at R00001550 (Claim 1), R00001557 (Claim 21). The Inventors also eliminated the requirement of a second electronic data processor for many of the reissue claims. (*See id.*).

[FF103] Dr. Dunsmore also testified at trial that the Inventors added the second electronic data processor requirement to the original '247 Patent claims to physically isolate the first logical process from the network. (Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 13:8–20). Since the first logical process in the reissued Asserted Patents was now a "browser process" with access to the network (*i.e.* non-isolated), there was no longer a need for the physical isolation from the

network afforded by the previously claimed the second electronic data processor. (*Id.*). Dr. Dunsmore agreed that these amendments surrendered all single-processor embodiments in the '247 Patent and were made for the purpose of distinguishing prior art. (*Id.* at 27:8–21, 30:5–18).

[FF104] Dr. Kogan similarly opined that Inventors' amendment was made to distinguish prior art and had the effect of surrendering single-processor embodiments. (Dkt. No. 268 (Trial Tr. 2/8/17 pm) at 147:1–148:1).

[FF105] The issue of § 251 recapture was raised by the PTO during the prosecution of the challenged reissue claims on two occasions. PTX-010 at R00001657–59, ¶¶ 4–8; PTX-11 at R00002194–95, ¶¶ 4–5. The PTO withdrew both recapture rejections in response to the Inventors' explanatory remarks. PTX-010 at R00001660–65, 1657–59, 1747–50, 1786–1805.

[FF106] In the first office action for the '528 Patent, the PTO examiner raised rejections under recapture and anticipation, noting that the Inventors had "removed the limitation that the 'second logical process executing on the second electronic data processor is' capable of exchanging data across a network of one more computers" and that "the reissue claims were not materially narrowed in other respects, and therefore recapture exists." PTX-010 at R00001657–59. The examiner explained that the claims of the '247 Patent were interpreted "as having a processor dedicated to network communications and the claimed system to display the data from both processors in a windowed format. This interpretation was supported by the Applicant's final amendment prior to allowance, which further specified that the system comprised two processors, one of which was capable of exchanging data across a network." *Id.* at R00001659. However, the examiner did not re-raise Corthell as an anticipating prior art reference. *See id.* at R00001660–65.

[FF107] The Inventors explained that "the claims of [the '247 Patent] do not include a limitation wherein a processor is dedicated to communicating across a network [and t]hus[]

recapture cannot apply . . . inasmuch as the claims of the ['247 Patent] do not recite a dedicated processor for communicating across the network." *Id.* at R00001747. In response to the Inventors' argument, the PTO withdrew its rejection, finding the Inventors' arguments "persuasive." *Id.* at R00001786.

[FF108] However, the examiner subsequently raised a new anticipatory reference, U.S. Patent Application Publication No. 2002/0002673 ("Narin"), against all the reissue claims because, among other reasons, Narin disclosed two "browser processes." *See* PTX-009 ('500 Patent File History) at R00001389–90 (11/17/2011 Final Rejection at 2–3); PTX-010 ('528 Patent File History) at R00001911–12 (11/14/2011 Final Rejection at 2–3); PTX-011 ('529 File History) at R00002314–15 (11/8/2011 Final Rejection at 2–3).

[FF109] The Inventors attempted to traverse Narin by explaining that Narin's "closed [first] process" was not the same "first browser process" found in the reissue patents because Narin's closed first process did not have access to the network. *Id.* at R00001866–871. The examiner acknowledged the Inventors' argument that their "first browser process is a web process," but noted the claims did not specify the "claimed browsers are actually web browsers." *Id.* at R00001911–12.

[FF110] Based on the examiner's remarks, the Inventors subsequently narrowed the term "browser process" to "web browser process" and specified that the "first browser process" is "capable of accessing data of a website via the network." *Id.* at R00001973, 1979, 1990–91. As a result, the reissue claims were allowed. *Id.* at 2025.

[FF111] Dr. Dunsmore explained at trial that the Inventors, in claiming "web browser processes" in the reissue claims rather than the broader species of "logical processes," materially narrowed the reissue claims by excluding all types of processes other than "web browser processes."

(Dkt. No. 271 (Trial Tr. 2/9/17 pm) at 12:1–13:2). He further explained that this narrowing related directly to the surrendered subject matter: a single-processor embodiment where the first logical process was isolated from the network but the second process was not. (Dkt. No. 263 (Trial Tr. 2/6/17 am) at 13:3–20, 14:12–19, 14:21–15:22). This is consistent with Mr. Cioffi's testimony on the subject. (*Id.* at 181:3–9).

[FF112] Google argues that Asserted Claims 43 and 67 are not materially narrowed with respect to the surrendered subject matter because a single processor has been added back into the claims. This argument assumes that the surrendered subject matter in its totality was the single-processor embodiment. As the Court has noted, however, the surrendered subject matter was not merely a single-processor embodiment, but also the first process being isolated from the network and the second process not being isolated. *See, e.g.*, FF ¶ 90.

II. CONCLUSIONS OF LAW

A. Legal Standard

1. Issues Tried to the Bench

[CL1] "In an action tried on the facts without a jury or with an advisory jury, the court must find the facts specially and state its conclusions of law separately." Fed. R. Civ. P. 51(a)(1). "If a party has been fully heard on an issue . . . the court may enter judgment against the party on a claim or defense that, under the controlling law, can be maintained or defeated only with a favorable finding on that issue." Fed. R. Civ. P. 52(c). Such a judgment "must be supported by findings of fact and conclusions of law." *Id.*

[CL2] The purpose of these findings is to "afford[] . . . a clear understanding of the ground or basis of the decision of the trial court." *S. S. Silberblatt, Inc. v. U.S. for Use & Benefit of Lambert Corp.*, 353 F.2d 545, 549 (5th Cir. 1965) (internal quotation marks omitted); *see also*

Schlesinger v. Herzog, 2 F.3d 135, 139 (5th Cir. 1993) (explaining that trial courts need not "recite every piece of evidence" or "sort through the testimony of . . . dozen[s] [of] witnesses").

[CL3] In making a particular finding, the district court "does not . . . draw any inferences in favor of the non-moving party and . . . [instead] make[s] a determination in accordance with its own view of the evidence." *Fairchild v. All Am. Check Cashing, Inc.*, 815 F.3d 959, 964 n.1 (5th Cir. 2016) (internal quotation marks omitted). However, a district court must still arrive at each of its factual determinations based on the applicable burden of proof. *In re Medrano*, 956 F.2d 101, 102 (5th Cir. 1992) (reversing the district court because it applied the preponderance of the evidence standard rather than the clear and convincing standard in making its factual determinations under Rule 52).

2. Reissue of Patents under 35 U.S.C. § 251

[CL4] The reissue statute provides in relevant part that "[w]henever any patent is, through error, deemed wholly or partly inoperative . . . the Director shall . . . reissue the patent for the invention disclosed in the original patent. . . . No new matter shall be introduced into the application for reissue." 35 U.S.C. § 251. Compliance with the statutory requirements of § 251 is a question of law for the Court that may involve underlying determinations of fact. *In re Youman*, 679 F.3d 1335, 1343 (Fed. Cir. 2012); *Forest Labs., Inc. v. Ivax Pharm., Inc.*, 501 F.3d 1263, 1270 (Fed. Cir. 2007); *Medtronic, Inc. v. Guidant Corp.*, 465 F.3d 1360, 1373 (Fed. Cir. 2006); *Pannu v. Storz Instruments, Inc.*, 258 F.3d 1366, 1370 (Fed. Cir. 2001); *Hester Indus., Inc. v. Stein, Inc.*, 142 F.3d 1472, 1479 (Fed. Cir. 1998); *In re Clement*, 131 F.3d 1464, 1468 (Fed. Cir. 1997).

[CL5] Google's § 251 defenses present questions of law for determination by the Court analogous to claim construction and prosecution history estoppel. *See Hester*, 142 F.3d at 1481. Nonetheless, where a question of law turns on how a person having ordinary skill in the art

would interpret disclosures in a specification, it is within the Court's purview to make factual findings. *Cf. Eli Lilly & Co. v. Teva Parenteral Meds., Inc.*, 845 F.3d 1357, 1369 (Fed. Cir. 2017) (noting the question of indefiniteness is a part of claim construction and therefore a question of law, but clarifying that "the district court's underlying determination, based on extrinsic evidence, of what a person of ordinary skill would understand" is a question of fact reviewed for "clear error").

a. Original Patent Requirement Under 35 U.S.C. § 251

[CL6] The original patent requirement derives from the reissue statute's language stating that a reissue patent must be "for the invention disclosed in the original patent." 35 U.S.C. § 251(a) (emphasis added). The Federal Circuit has applied this language to require that the reissue claims be for the "same invention" as the original patent. *Antares Pharma, Inc. v. Medac Pharma Inc.*, 771 F.3d 1354, 1358–59 (Fed. Cir. 2014).

[CL7] A "reissue claim is for the 'same invention' if the original patent specification fully describes the claimed inventions." *Id.* at 1359 (citing *U.S. Indus. Chems., Inc. v. Carbide & Carbon Chems. Corp.*, 315 U.S. 668, 676 (1942)). However, "for broadening reissue claims, the specification of the original patent must do more than merely suggest or indicate the invention recited in reissue claims; '[i]t must appear *from the face of the instrument* that what is covered by the reissue was intended to have been covered and secured by the original." *Forum US, Inc. v. Flow Valve, LLC*, 926 F.3d 1346, at 1351–52 (Fed. Cir. 2019) (quoting *U.S. Indus. Chems.*, 315 U.S. at 676) (emphasis in original). Thus, "the essential inquiry under the 'original patent' clause of § 251 . . . is whether one skilled in the art, reading the specification, would identify the subject matter of the new claims as invented and disclosed by the patentees." *In re Amos*, 953 F.2d 613, 618 (Fed. Cir. 1991).

[CL8] As the original patent requirement of § 251 compares the reissue claims to the disclosure of the original patent specification, it is "analogous to the written description requirement" of 35 U.S.C. § 112. *See Antares*, 771 F.3d at 1362 (Fed. Cir. 2014); *see also In re Depomed Patent Litig.*, No. 13-4507, 2016 WL 7163647 at *28 (D.N.J. Sept. 30, 2016) ("'[A] reissue application must find support in the original patent's description such that the original description 'clearly allow[s] persons of ordinary skill in the art to recognize that the inventor invented what is claimed.'" (quoting *Antares*, 771 F.3d at 1362)). However, unlike the written description requirement of § 112, to satisfy the original patent requirement of § 251, the reissue claims' subject matter must be "clearly and unequivocally" disclosed—i.e., the "exact embodiment claimed on reissue" must be "expressly disclosed in the [original patent] specification." *See Antares*, 771 F.3d at 1362–63; *see also Depomed*, 2016 WL 7163647 at *28 ("The original patent rule requires that reissue claims must be to matter 'explicitly disclosed and taught rather' than merely 'suggested or indicated in the specification.'" (quoting *Antares*, 771 F.3d 1354, 1361)).

b. Rule Against Recapture Under 35 U.S.C. § 251

[CL9] "The recapture rule bars a patentee from recapturing subject matter, through reissue, that the patentee intentionally surrendered during the original prosecution in order to overcome prior art and obtain a valid patent." *Youman*, 679 F.3d at 1343. "Under this rule, claims that are 'broader than the ***original patent claims*** in a manner directly pertinent to the subject matter surrendered during prosecution' are impermissible." *Clement*, 131 F.3d at 1468 (emphasis added).

[CL10] "Whether the claims of a reissue patent violate" the recapture rule under "35 U.S.C. § 251, and thus are invalid, is a question of law." *In re Mostafazadeh*, 643 F.3d 1353, 1358 (Fed. Cir. 2011). Recapture is assessed using the following three-step inquiry:

> (1) whether and in what respect the reissue claims are broader in scope than the original patent claims;

> (2) whether the broader aspects of the reissue claims relate to subject-matter surrendered in an original application; and
>
> (3) whether the reissue claims were materially narrowed in other respects, so that the claims may not have been enlarged.

Greenliant Sys., Inc. v. Xicor LLC, 692 F.3d 1261, 1267 (Fed. Cir. 2012). If the answer to the first two questions is yes, and the last is no, "the surrendered subject matter has crept into the reissue claims and they are barred under the recapture rule." *Youman*, 679 F.3d at 1345.

[CL11] However, the recapture rule is not triggered if the reissued claims are directed to "overlooked aspects" of the invention, such as "patentably distinct (1) inventions; (2) embodiments; or (3) species not originally claimed—not mere incidental features of the originally claimed invention." *Mostafazadeh*, 643 F.3d at 1360.

B. Analysis

[CL12] The Court first considers whether Google has met its burden to show by clear and convincing evidence that the Asserted Claims are invalid under the original patent requirement of 35 U.S.C. § 251. *See U.S. Indus. Chems.*, 315 U.S. at 678 ("[I]t is the duty of a court to determine for itself, by examination of the original and the reissue, whether they are for the same invention."); *cf. Fisher-Price, Inc. v. Safety 1st, Inc.*, 109 F. App'x 387, 393 (Fed. Cir. 2004) (explaining that the accused infringer has "the burden of proving by clear and convincing evidence that the written description requirement [i]s not met").

1. Original Patent Requirement of § 251

a. Two or More "Web Browser Processes" Limitation of the Asserted Claims

[CL13] Each of Asserted Claims require two or more "web browser processes." FF ¶¶ 32–36. A "web browser process" as set forth in the Asserted Claims is a "process that can

[directly or indirectly] access data on websites." *See* FF ¶ 7–9. Accordingly, for the Asserted Claims to satisfy the original patent requirement of § 251, the '247 Patent specification must "clearly and unequivocally" disclose an "exact embodiment" with two or more "process[es] that can [directly or indirectly] access data on websites." *See Antares*, 771 F.3d at 1362–63; *see also* FF ¶¶ 7–9.

[CL14] Google argues that "[t]here is no clear and unequivocal disclosure in the '247 Patent specification" of the term "first web browser process." (Dkt. No. 292 at 15). Specifically, Google contends that the '247 Patent specification only discloses a second logical process capable of accessing website data, and thus there is no disclosure of a first process that can access data on websites (*i.e.*, a "first web browser process"). (*Id.* at 19). Google relies on Dr. Kogan's opinion that Figure 6 and Column 14 of the '247 Patent specification are limited to online gaming such that "interactive network process status data" is not "website data," and therefore Figure 6 and Column 14 cannot refer to "web browser processes." FF ¶ 48.

[CL15] Plaintiffs counter that Dr. Kogan's opinions narrowly interpret the embodiment disclosed at Figure 6 and Column 14 of the '247 Patent specification. They assert that Column 14 describes "online gaming" as an *example* of an "interactive network process." (Dkt. No. 295 at 56.) They further contend that Figure 6 of the '247 Patent identifies the broader "interactive network process" embodiment and specifies (1) that "interactive network process status data" is received from the network connection (step 620); (2) the first process on P1 receiving the "interactive network process status data" from P2 (step 640), and (3) the "updated interactive network process status data" being passed back to the network via the network connection (step 660). FF ¶¶ 49. Moreover, Plaintiffs note Dr. Dunsmore's disagreement with Dr. Kogan's narrow interpretation of Figure 6 and Column 14. Dr. Dunsmore instead opined that a skilled artisan

would recognize these portions of the specification as disclosing two processes executing on two processors, both accessing data from the network—and therefore, disclosing first and second web browser processes. FF ¶¶ 44, 58.

[CL16] Google also argues that P1 and P2 in Column 14 refer to *physical* processors, not processes. (Dkt. No. 292 at 15). Plaintiffs respond that Google's interpretation contradicts the clear language of the '247 Patent specification when read as a whole. (Dkt. No. 295 at 6). Plaintiffs assert that the specification specifically notes (1) the functions of P1 120 in Figure 1 may be carried out by a first logical process, and (2) the functions of P2 140 may be carried out by a second logical process. (*Id.* at 67). The Court addresses this below in relation to the parties' dispute over whether the "one processor" claim limitations violate § 251. *See* CL ¶¶ 31–38. In short, the Court agrees that the specification teaches an embodiment with two processes on a single processor. *Id.*

[CL17] On balance, the Court is persuaded that Google has not shown by clear and convincing evidence that the Asserted Claims violate the original patent rule. Despite Google's arguments to the contrary, the Court finds that the '247 Patent specification clearly and unequivocally discloses both first and second web browser processes.

[CL18] First, "interactive network process" is not limited online gaming processes. Google's interpretation of the "interactive network process" embodiment of Column 14 of the '247 Patent is unduly narrow and is not supported by the specification's express teachings. Figure 6 refers more broadly to an "interactive network process" and is not limited to online gaming. FF ¶¶ 69–71. Column 16 of the '247 Patent corresponds to Figure 6 and clearly indicates that online gaming is just one example of the "interactive network process" described in Figure 6. *Id.* Accordingly, the Court is persuaded that the '247 Patent specification discloses online gaming as an *example* of an interactive network process. *See, e.g., Williamson v. Citrix Online, LLC,* 792

F.3d 1339, 1346–47 (Fed. Cir. 2015) ("This court has repeatedly 'cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.'").

[CL19] Second, the "interactive network process status data" disclosed in Column 14 of the '247 Patent is likewise not limited to "game status data." Although the '247 Patent specification teaches that an "interactive network process" ***may be used***, for online "gaming," the specification teaches that "messaging[] and browsing" are also applications that have an "interactive nature." *See* FF ¶ 46. Furthermore, the "interactive network process" embodiment describes P1 120 connecting to the "network," which is defined in the '247 Patent specification as the "Internet, a LAN, WAN, VPN, etc." FF ¶ 47. Accordingly, the Court is persuaded that "interactive network process status data" includes "website data."

[CL20] The specification does not use the terms "interactive network process" and "online game" interchangeably, but instead describes an online game as one example of an interactive network process. The Court finds that Figure 6 and Column 14 of the '247 Patent specification are not limited to online gaming and game status data as Dr. Kogan suggests.

[CL21] Having rejected Google's argument that the "interactive network process" embodiment of the '247 Patent is limited to gaming processes and gaming data, the Court finds that Dr. Dunmore's and Dr. Arbaugh's trial testimonies are helpful in aiding the Court to understand what the '247 Patent specification "actually say[s]."[1] *See U.S. Indus. Chems.*, 315 U.S. at 678 ("[I]t is permissible, and often necessary, to receive expert evidence to ascertain the meaning

[1] Since Mr. Cioffi testified as a *fact witness* and *inventor*, his testimony is not helpful in determining what those skilled in the art would recognize as being disclosed by the '247 Patent specification. FF ¶¶ 1, 21; *see also Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1454 (Fed. Cir. 1984) ("It should be clear that that hypothetical person is not the inventor, but an imaginary being possessing 'ordinary skill in the art' created by Congress to provide a *standard of patentability*. . . . Realistically, courts never have judged patentability by what the real inventor/applicant/patentee could or would do.").

of a technical or scientific term or term of art so that the court may be aided in understanding not what the instruments mean but what they actually say."). Their testimonies indicate that those skilled in the art would understand that web browser processes are *narrower* members of the broader class of "interactive network processes"— a class that also includes gaming applications. *Cf. U.S. Indus. Chems.*, 315 U.S. at 678 ("It is inadmissible to *enlarge* the scope of the original patent by recourse to expert testimony to the effect that a process described and claimed in the reissue, different from that described and claimed in the original patent, is, because equally efficacious, in substance that claimed originally.") (emphasis added) (footnotes omitted).

[CL22] The Federal Circuit's decision in *Forum US, Inc. v. Flow Valve, LLC*, outlines how expert testimony may be properly used to resolve the factual questions raised by Google's "original patent" defense. *See* 926 F.3d at 1352 ("We apply the standard set forth in *Industrial Chemicals* and *Antares* to this case."). In *Forum*, the specification disclosed, and all the original claims claimed, use of "arbors" in all embodiments of the invention. *Id.* at 1348–50. Although the plaintiff conceded there was no disclosure of an "arbor-less" embodiment of the invention, the plaintiff's expert testified that a person of ordinary skill in the art would recognize an arbor-less embodiment was possible based on "boilerplate language [in the specification] that modifications can be made to the original disclosed invention." *Id*. at 1352.

[CL23] The Federal Circuit affirmed summary judgment of invalidity and rejected the patentee's reliance on a a person of ordinary skill's understanding, stating that "[e]ven if a person of ordinary skill in the art would understand that the newly claimed, arbor-less invention would be possible, that is insufficient to comply with the" original patent requirement. *Id.* at 1353. The court specifically rejected the plaintiff's expert declaration because it "d[id] not aid the court in understanding what the 'instruments . . . actually say,' but instead assert[ed] what a person of

ordinary skill in the art would purportedly understand *in the absence* of the disclosure of an arbor-less embodiment." *Id* at 1352 (emphasis added).

[CL24] Here, in contrast to *Forum*, Plaintiffs have not conceded that the '247 Patent specification fails to disclose the challenged limitations of the Asserted Claims. Instead of relying on a POSITA's understanding that "modifications to the invention are possible," Plaintiffs identify specific portions of the '247 Patent specification corresponding to each challenged limitation and provide expert testimony explaining what such disclosures convey to a person of ordinary skill in the art. Simply put, the parties' disputes here focus on whether such as skilled person would understand such portions of the '247 Patent specification as clearly and unequivocally disclosing the Asserted Claims.

[CL25] Dr. Dunsmore testified that a person of skill in the art would recognize that (1) "interactive network process" encompasses web browser processes, and (2) "interactive network process status data" encompasses "website data." FF ¶¶ 69–75. Dr. Dunsmore also opined that a logical process could be just about any process, including a "process working with web browsers." FF ¶ 43. Indeed, the parties agree that a "logical process" includes a "web browser process." Google concedes that "web browser processes" are a narrower subspecies of "logical processes" described throughout the specification. FF ¶ 41. Moreover, Google's invalidity expert, Dr. Arbaugh, called the "first logical process" the "same as the first web browser process." FF ¶¶ 42.

[CL26] Accordingly, substantial evidence indicates that the '247 Patent specification clearly and unequivocally discloses both a first process capable of accessing website data (*i.e.*, a "first web browser process") and a second web browser process, in satisfaction of § 251. *Antares*, 771 F.3d at 1362; *see also Revolution Eyewear, Inc. v. Aspex Eyewear, Inc.*, 563 F.3d 1358, 1367 (Fed. Cir. 2009) (explaining that the § 251 "inquiry is analogous to the written description

requirement under § 112, ¶ 1."); *cf. In re Wilder*, 736 F.2d 1516, 1520 (Fed. Cir. 1984) (explaining in the context of the analogous § 112 analysis that "[i]t is not necessary that the claimed subject matter be described identically, but the disclosure originally filed must convey to those skilled in the art that applicant had invented the subject matter later claimed").

[CL27] Moreover, Google's § 251 arguments regarding web browser processes are contradictory. Google contends that the '247 Patent specification does not clearly disclose a first "web browser process" for purposes of the *original patent requirement* because the specification's disclosure of a first "logical process" is not specific enough and that "logical processes" could refer to a number of different software processes besides "web browser processes" (Dkt. No. 292 at 19.) However, when alleging *improper recapture*, Google contends that the patents' "first logical process" includes a process that "could 'access website data,'" which is the precise definition of a "web browser process." (*Id.* at 14–15). If a person of ordinary skill would recognize that the '247 Patent specification's disclosure of a "first logical process" encompasses a "web browser process," then narrowing the disclosed "logical process" to directly claim a known sub-species (*i.e.*, the "web browser process" of the Asserted Claims) is clearly and unequivocally within the scope of the original invention disclosed in the '247 Patent specification.

[CL28] Furthermore, the '247 Patent's Summary of the Invention never refers to physical processors, but instead repeatedly notes that an "object of the present invention" is to provide a computer system capable of executing instructions in a "first logical process" and "second logical process," and that malware "downloaded from the network and executing as part of the second logical process is incapable of initiating access to the 'first memory space'." FF ¶¶ 59–60. *See Wireless Agents LLC v. Sony Ericsson Mobile Comm'cns AB*, 189 F. App'x 965, 966 (Fed. Cir. 2006) ("This description is not merely referring to a preferred embodiment; rather,

as part of the 'Summary of the Invention,' it is 'commensurate with the invention as claimed.'"). (citing 37 C.F.R. 1.73). This is described in Column 16 of the '247 Patent specification, which discloses that the functions carried out by the processors "may comprise separate, secure logical processes." FF ¶¶ 59–60.

[CL29] While the exact term "web browser process" does not appear in the '247 Patent specification, Google has not presented clear and convincing evidence demonstrating that those skilled in the art would not recognize the first and second "web browser processes" recited in the Asserted Claims as being disclosed by the '247 Patent specification. As such, the Court is persuaded that those skilled in the art would recognize that the '247 Patent specification's "interactive network processes" embodiment encompasses the dual-web-browser process limitations set forth in the Asserted Claims. Such is sufficient to comply with the clear and unequivocal disclosure standard set forth in *U.S. Industrial Chemicals* and *Antares*. *See Forum*, 926 F.3d at 1352.

[CL30] Accordingly, the Court finds that the '247 Patent specification uses the terms "first" and "second" "logical processes" to refer interchangeably to P1 and P2, and that "logical processes" refer to a number of possible computer processes including "web browser processes." *See* FF ¶¶ 31–47. As a result, the Court is persuaded that Google has not shown by clear and convincing evidence that the dual-web-browser processes of the Asserted Claims violate the original patent requirement of § 251.

b. "One Processor" Limitation of Claim 43 of the '500 Patent and Claim 67 of the '528 Patent

[CL31] Google contends that Claim 43 of the '500 Patent and Claim 67 of the '528 Patent violate the original patent requirement of § 251 for claiming a "single processor." (Dkt. No. 292 at 17–19; Dkt. No. 297 at 7).

[CL32] Google argues that Dr. Dunsmore misreads the '247 Patent specification because Column 16—which discloses that "the functions carried out by processors 920 and 940 may comprise separate, secure logical processes executing on the same physical processor," FF ¶¶ 38, 56–57—should be interpreted as describing "processes running on two processors, not one." (Dkt. No. 292 at 18). Plaintiffs argue that processor 960 depicted in Figure 9 and described in Column 16 of the '247 Patent specification teaches a single processor embodiment. (*See* Dkt. No. 295 at 10–11).

[CL33] The '247 Patent specification supports Plaintiffs' position. "In accordance with a preferred embodiment of the present invention . . . Computer system 100 comprises a video processor 970, ***processor 960***, and a memory data storage area 950. Processor 960 ***may further*** comprise multiple processor ***cores***, illustrated by 1st processor 920 and 2nd processor 940." FF ¶ 55–56 (emphasis added). The first sentence discloses processor 960 in isolation; the second sentence *further* discloses that processor 960 *may* comprise two processor *cores*. *Id.*

[CL34] As to this particular disclosure, Google argues that the word "may," in context, indicates that the disclosed embodiment has only two or more processor cores but excludes the possibility of having only one core. (Dkt. No. 292 at 18). However, such an interpretation reads out the word "further." FF ¶ 56. "Every word has consequences." *See* Arthur Hirsh, THE FRENCH LEFT: A HISTORY & OVERVIEW 41 (Black Rose Books 1982) (quoting and translating Jean-Paul Sartre, *Présentation*, 1 LES TEMPS MODERNES: REVUE MENSUELLE, Oct. 1945, at 1, 5). Giving meaning to every word of Column 16, dual- and multi-processor configurations are disclosed as additive to the initial disclosure of singular processor 960. *See* FF ¶ 54–60 *see also U.S. Indus. Chems.*, 315 U.S. at 678 (explaining that although "it is permissible, and often necessary, to receive expert evidence to ascertain the meaning of a technical or scientific term or term of art," "it is the

duty of a court to determine ***for itself***, by examination of the original and the reissue, whether they are for the same invention.") (emphasis added).

[CL35] The Court's conclusion is also confirmed by the subsequent disclosure of Column 16: "[T]he functions carried out by processors 920 and 940 may comprise separate, secure logical processes executing on ***the same physical processor***." FF ¶ 38, 57.

[CL36] Google argues that this passage discloses only that "logical processes" and related "functions" are "carried out" or executed on two different processors (P1 and P2) and does not disclose that processors P1 or P2 are themselves software processes. (Dkt. No. 292 at 18)

[CL37] However, the '247 Patent specification explains that the "first logical process may comprise ***executing instructions*** necessary to carry out the functions of a first computer program" and the "second logical process may comprise ***executing instructions*** necessary to carry out the functions of a web browser program." FF ¶ 57. The first and second logical processes therefore are not instructions or functions executing *on* processors P1 or P2. Instead, the first and second logical processes—"executing on ***the same physical processor***"—*actually execute* instructions to "carry out the functions of a first computer program" or "the functions of a web browser program," respectively, that would have been executed by the physical processors P1 and P2 of the alternative Figure 1 embodiment. This reading is confirmed by the '247 Patent specification explaining that "***the functions carried*** out by P2 140 (FIG. 1) may comprise a secure logical process, which may be configured to be able to automatically initiate access to either M1 110 or ***another logical process performing the functions of P1 120***." FF ¶¶ 38, 57.

[CL38] In summary, Column 16 of the '247 Patent specification clearly and unequivocally discloses a single processor embodiment. Accordingly, Google has failed to prove

by clear and convincing evidence that the single processor claim limitations of Claim 43 of the '500 Patent and Claim 67 of the '528 Patent violate the original patent requirement of § 251.

c. A First Web Browser Process Passing Data to a Second Web Browser Process Limitation of Claim 43 of the '500 Patent, Claim 67 of the '528 Patent, and Claim 49 of the '529 Patent

[CL39] Google next contends that Claim 43 of the '500 Patent, Claim 49 of the '529 Patent, and Claim 67 of the '528 Patent are invalid under the original patent rule for failure to disclose a first web browser process that passes and/or exchanges website data with the second web browser process. (Dkt. No. 292 at 23).

[CL40] Although Google did not present any expert testimony or offer oral argument on this § 251 defense at trial, *see* FF ¶¶ 16–17, 78, the Court finds that Google has not waived this § 251 defense. Google identified § 251 as defense in its pre-trial statement and specifically identified this defense in its Rule 50(a) motion. *See* FF ¶¶ 15, 28.

[CL41] The Court has already determined that (1) the '247 Patent specification clearly and unequivocally discloses an "interactive network process" embodiment that includes two web browser processes; and (2) "interactive network process data" encompasses "website data." CL ¶¶ 13–30.

[CL42] Moreover, the '247 Patent specification clearly and unequivocally discloses the passing of website data from a first web browser process to a second web browser process by disclosing the passing and exchange of "interactive network process status data" between the two processes. *See* FF ¶ 72. As discussed above, Column 14 discloses passing "interactive network process status data" from the network between P1 and P2. *Id.* "Interactive network processes" on its face would include "web browser processes" and would be understood by a person of ordinary skill in the art to include "web browser processes" because both are capable of accessing website

data. FF ¶¶ 72, 73. "Interactive network process data" exchanged between P1 and P2 would include website data. FF ¶¶ 72, 73. Finally, Figure 1 discloses a first process (P1 120) and second process (P2 140) with two-way communication arrows between each other, which further supports the exchange of data between the first and second web browser processes. FF ¶ 74.

[CL43] As a result, Google has not met its burden of clear and convincing evidence to prove that the '247 Patent specification does not clearly and unequivocally disclose a first web browser process passing website data to or exchanging website data with a second web browser process.

d. A First Web Browser Process Initializing a Second Web Browser Process Limitation of Claim 49 of the '529 Patent

[CL44] Google's last argument under the original patent requirement is that the specification does not disclose the "first web browser process initializing a second web browser process," as recited by of Claim 49.

[CL45] Although Google did not present any expert testimony or offer oral argument on this § 251 defense at trial, *see* FF ¶¶ 16–17, 78, the Court finds that Google has not waived this § 251 defense. Google identified § 251 as defense in its pre-trial statement and specifically identified this defense in its Rule 50(a) motion. *See* FF ¶¶ 15, 28.

[CL46] The Court has already determined that (1) the '247 Patent specification clearly and unequivocally discloses "interactive network process" embodiment that includes two web browser processes; and (2) "interactive network process data" encompasses "website data." CL ¶¶ 13–30.

[CL47] The '247 Patent specification provides specific language that clearly and unequivocally discloses a "first web browser process initializing a second web browser process." Specifically, the figures and written description disclose in several instances that processor P1 is

capable of opening and/or initializing the processes on processor P2. FF ¶¶ 80, 82. For example, Figure 2 of the '247 Patent describes processor P1 instructing processor P2 to initiate a "protected process" and open a process window (step 220). *Id.* The specification's description of Figure 2 notes the "1st processor 120 instruct[ing] 2nd processor 140 to initiate the protected process and open one or more process windows." *Id.* The specification further explains that the protected process may be "browsing the internet." *Id.*

[CL48] In another embodiment, the '247 Patent specification again discloses "processor P1 120 instruct[ing] processor P2 140 to initiate a protected process and open a process window." FF ¶¶ 81, 82. This embodiment discloses a user opening a web browser program, followed by processor P1 instructing processor P2 to open one or more protected process windows for web browsing. *Id.* Although this particular disclosure involves a Figure 10 of the '247 Patent, the specification explains that the disclosure is "[i]n accordance with the present teachings"—*i.e.*, the disclosure of Figure 2—and "[i]n accordance with a preferred embodiment of the present invention." *See id.*

[CL49] Since P1 and P2 also refer to "logical processes" and not just processors, the Court is persuaded that the '247 Patent specification clearly and unequivocally discloses in multiple places a first web browser process (P1) capable of initializing a second web browser process (P2). Accordingly, Google has not met its burden to prove that the '247 Patent specification does not clearly and unequivocally disclose "first web browser process initializing a second web browser process."

2. The Rule Against Recapture Under § 251

a. Threshold Inquiry Regarding Overlooked Aspects

[CL50] The Federal Circuit has explained that the recapture rule is not triggered if the reissue claims are directed to "overlooked aspects" of the invention, which are "patentably distinct (1) inventions; (2) embodiments; or (3) species not originally claimed—not mere incidental features of the originally claimed invention." *Mostafazadeh*, 643 F.3d at 1360. "The purpose of this exception to the recapture rule is to allow the patentee to obtain through reissue a scope of protection to which he is rightfully entitled for such overlooked aspects." *Hester*, 142 F.3d at 1483.

[CL51] Google raises three arguments why the challenged reissue claims were not directed towards overlooked aspects of the original '247 Patent claims. (Dkt. No. 292 at 9–13).

[CL52] Google first argues that the originally filed claims of the '609 Application were broad enough to encompass "web browser processes" and therefore "web browser processes" were originally "claimed." (*See* Dkt. No. 292 at 9–11 (citing *Hester*, 142 F.3d at 1483)). The original '247 Patent claimed first and second "logical processes" where the reissue patents claim first and second "web browser processes." *See* FF ¶ 32; *compare also, e.g.*, FF ¶¶ 84–85, 93–94 *with* FF ¶¶ 33–36. Google argues that since the embodiments set forth in Claim 43 of the '500 Patent and Claim 67 of the '528 Patent were "potentially" covered by the originally filed claims of the '609 Application, the challenged reissue claims cannot be considered "overlooked." (Dkt. No. 292 at 10).

[CL53] However, *Hester* is not applicable to the facts of this case. In *Hester*, the allegedly overlooked claim features were *not narrower* than the original claims or were *explicitly* recited in the originally filed patent claims, and thus the claimed features could not be considered "overlooked." *See* 142 F.3d at 1483 ("Hester argues that the claims are materially narrower by the

additional of the 'spiral conveyance path' and 'high humidity stream' limitations. . . . However, the term 'high humidity stream' is actually *the same as or broader* than the limitation in [the] original claim . . . . [and] Hester concedes that the term 'high humidity steam' is not narrower. . . . [Accordingly,] these aspects were included in original claim 1. Additionally, with regard to the 'spiral conveyance path' limitation, original dependent claim 12 *explicitly recites* 'a spiral path.'") (emphasis added).

[CL54] Here, however, the originally filed Claim 1 of the '609 Application set forth a first logical process with access to the first memory space and second memory space. FF ¶¶ 84. The second logical process was claimed as "being further capable of exchanging data across a network of one or more computers." *Id.*

[CL55] Although Google cites Professor Dunsmore's testimony for the proposition that the "logical processes" of the '609 Application's originally filed claims do not *per se* exclude a first web browser process with access to website data, the claims cannot be construed in a vacuum—*i.e.*, without reference to the intrinsic record and how it informs those skilled in the art.[2] FF ¶ 89.

[CL56] Google's own experts and the Court have already interpreted the original '247 Patent as excluding the very embodiment Google claims is covered by the original claims. FF ¶¶ 86–90. Google's expert, Dr. Arbaugh, confirmed it was his opinion that the original '247 Patent required a second processor to isolate the computer system from the network. FF ¶ 88. Google's other expert, Dr. Kogan, opined that the reissue patents disclosed a different invention from the

[2] *See David Netzer Consulting Eng'r LLC v. Shell Oil Co.*, 824 F.3d 989, 993 (Fed. Cir. 2016) (explaining that patent claims are construed with reference to the intrinsic record).

original '247 Patent, but inconsistently couched his opinion as applying only for the original patent rule, not for recapture. FF ¶ 88.

[CL57] Moreover, the Court agrees with the Magistrate Judge's ruling that "the essence of the invention claimed in the '247 Patent was isolation—only the second logical process could access the network; the rest of the system could not." (*See* Dkt. No. 212 at 8).

[CL58] Finally, Google conceded as a part of its original patent rule arguments in its Rule 50(a) motion for JMOL that "the invention disclosed in the reissue patents is entirely different from the one disclosed in the original '247 Patent . . . . [The] first logical process ran on the first processor and a second logical process ran on the second processor, and only the second process . . . was a network-interface program or browser." FF 92 (Dkt. No. 251 at 5–6). *Cf. Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1351 (Fed. Cir. 2001) ("A patent may not, like a 'nose of wax,' be twisted one way . . . and another" (internal quotation marks omitted)).

[CL59] Accordingly, the Court finds that both a first and second "web browser process," though disclosed in the '247 Patent specification, were not originally claimed by the '247 Patent. *Hester* is therefore inapplicable.

[CL60] Google's second argument for why Claim 43 of the '500 Patent and Claim 67 of the '528 Patent are not directed to overlooked aspects similarly falls short. Google argues that the '247 Patent specification does not at all disclose an embodiment with "two web browsers." (Dkt. No. 292 at 11). However, this argument is the same as Google's previously considered argument that the '247 Patent specification fails to disclose a first "web browser process" in violation of the original patent rule, and the Court is unpersuaded for the reasons previously discussed. *See* CL ¶¶ 13–30.

[CL61] Google's third argument is that the narrowing from first a "logical process" in the '247 Patent to a first "web browser process" in Claim 43 of the '500 Patent and Claim 67 of the '528 Patent was not a patentable distinction because changing "logical" to "web browser" is too minor, given that a "web browser process" is a type of logical process. (Dkt. No. 292 at 12). Google had the opportunity but failed to offer evidence at trial to establish that Claims 43 and 67 were obvious (*e.g.*, not patentably distinct) over the original claims, given the Court's ruling that a genuine dispute of material fact remained as to overlooked aspects that precluded summary judgment. *See* FF ¶ 91.

[CL62] The only evidence Google presented at trial as to whether Claims 43 and 67 are patentably distinct over the original '247 Patent claims was the intrinsic record and prosecution history of the reissue patents. FF ¶¶ 91, 93–101, 104–109. However, the Court has already determined that the '247 Patent claims are directed towards a different invention than the challenged reissue claims. FF ¶ 90. The '247 Patent's original claims were directed toward isolation, where only the second process could access the network and the rest of the system could not. *Id.* Claim 43 of the '500 Patent and Claim 67 of the '528 Patent are distinct because they no longer claim an isolated first process. *See* FF ¶¶ 33–36, 86, 87, 90, 92. Indeed, Google and its experts have acknowledged on several occasions that the invention disclosed in the '247 Patent claims is materially different than the invention disclosed in the challenged reissue claims. FF ¶ 88. The Court is not persuaded that Claim 43 of the '500 Patent and Claim 67 of the '528 Patent fail to claim inventions patentably distinct from those of in the original '247 Patent.

[CL63] Accordingly, the Court is persuaded that Google has not proven by clear and convincing evidence that a first and a second "web browser process" were originally claimed by the '247 Patent. Google's argument that "web browser processes" were "claimed" in the original

patent (1) cannot overcome the intrinsic record and its own admissions and (2) is not supported by the cited case law. As the web browser processes are supported by the specification and have not been shown to be patentably indistinct from those claimed in the '247 Patent, the Court agrees with Plaintiffs that the challenged Asserted Claims are directed t overlooked aspects of the specification.

b. Test for the Rule Against Recapture

[CL64] In addition to the Court's findings that Claim 43 of the '500 Patent and Claim 67 of the '528 Patent are directed towards "overlooked aspects" of the '247 Patent, and thus would not trigger the rule against recapture, the Court is independently persuaded that Google could not show by clear and convincing evidence that challenged claims violate the rule against recapture.

i. Step 1: Claim 43 of the '500 Patent and Claim 67 of the '528 Patent Are Broader than the '247 Patent's Originally Issued Claims

[CL65] The first step of the recapture test is to "determine whether and in what 'aspect' the reissue claims are broader than the [original] patent claims." *Mostafazadeh*, 643 F.3d at 1358. "A reissue claim that deletes a limitation or element from the [original] patent claims is broader with respect to the modified limitation." *Id.*

[CL66] The '247 Patent's originally issued claims require two or more physical processors because they each recite having a "first" and a "second" "electronic data processor." FF ¶ 31. By comparison, Claim 43 of the '500 Patent and Claim 67 of the '528 Patent do not require two or more processors because they recite having "at least one electronic data processor." FF ¶¶ 33, 35.

[CL67] The parties agree that the first step of the recapture test is met. Professor Dunsmore and Dr. Kogan agreed on this point, and Plaintiffs did not dispute this in their briefing. FF ¶ 83.

[CL68] Accordingly, the Court is persuaded that Claim 43 of the '500 Patent and Claim 67 of the '528 Patent are broader than the '247 Patent's originally issued claims with respect to the number of required processors. Claims 43 and 67 encompass systems with either a single processor or two or more processors, rather than only encompassing systems with two or more processors, as the '247 Patent's originally issued claims required. Indeed, the two reissue claims delete the '247 Patent's claim limitations that require at least a "second electronic data processor." The first step of the recapture test is met with respect to Claim 43 of the '500 Patent and Claim 67 of the '528 Patent.

ii. Step 2: The Broadened Subject Matter Relates to Surrendered Subject Matter

[CL69] The second step of the recapture test is to "determine whether the broader aspects of the reissue claims relate to surrendered subject matter." *Mostafazadeh*, 643 F.3d at 1358 (quotations omitted). "To determine whether an applicant surrendered particular subject matter, [courts] look to the prosecution history for arguments and changes to the claims made in an effort to overcome a prior art rejection." *Id.*

[CL70] For example, in *North American Container, Inc. v. Plastipak Packaging, Inc.*, reissue claims covering plastic bottle structures were broadened to "no longer require the 'inner walls' to be 'generally convex.'" 415 F.3d 1335, 1350 (Fed. Cir. 2005). The Federal Circuit found that the broadened subject matter was surrendered during prosecution because the applicants had "amended [the claims] to refer to the convex nature of the inner wall portions" and "argued that

the 'shape of the base as now defined in the claims differs from those of . . . the [prior art] patent, wherein the corresponding wall portions are slightly concave.'" *Id*.

[CL71] Here, the second step is met because the broadened subject matter of a single processor system was surrendered during prosecution of the original '247 Patent. To overcome the prior art references Corthell, Policard, and Brown, the Inventors amended the originally filed Claims 1 and 15 of the '609 Application to require at least a "first and second electronic data processor." *Compare* FF ¶¶ 84–85 *with* FF ¶¶ 93–94.

[CL72] In accompanying remarks, the Inventors relied on these amendments to distinguish the prior art, stating: "In stark contrast [to Corthell], ***Applicants teach the use of a multi-processor computer*** having at least a first and second electronic data processor," and "amend[ments to] the claims to specify a computer system ***having at least a first and second electronic data processor*** . . . distinguish[] claims 10 and 15 from the teachings of Policard and Brown." *See* FF ¶¶ 99–101 (emphasis added). Based on these amendments and remarks, the examiner allowed the claims because "the prior art does not show a single operating system that executes on multiprocessors." FF ¶ 101.

[CL73] The parties agree that step two of the recapture test is met. Plaintiffs' expert Dr. Dunsmore confirmed in his jury trial testimony that the Asserted Claims were amended to require two processors to distinguish prior art. FF ¶ 103. Dr. Dunsmore also confirmed that these amendments surrendered all single-processor embodiments in the '247 Patent. *Id*. Additionally, Google's expert Dr. Kogan testified that the second step is met because Plaintiffs surrendered the subject matter of a single processor to distinguish prior art. FF ¶ 104. Lastly, Plaintiffs also did not dispute the second step of the recapture test in in post-trial proceedings. (Dkt. No. 295 at 14–23).

[CL74] The Court is persuaded that the second step of the recapture test is met with respect to the Claim 43 of the '500 Patent and Claim 67 of the '528 Patent because the broadened subject matter of a single processor set forth in the aforementioned claims was surrendered during prosecution of the '247 Patent.

iii. Step 3: Claim 43 of the '500 Patent and Claim 67 of the '528 Patent Are Materially Narrowed With Respect to Surrendered Subject Matter

[CL75] The third step of the recapture analysis is to "determine whether the reissue claims were materially narrowed in other respects, so that the claims may not have been enlarged, and hence avoid the recapture rule." *N. Am. Container*, 415 F.3d at 1349. "[T]he recapture rule is violated when a limitation added during prosecution [of the original patent] is eliminated entirely, even if other [unrelated] narrowing limitations are added to the claim." *Mostafazadeh*, 643 F.3d at 1361; *see also Youman*, 679 F.3d at 1345 ("[W]here the patentee eliminates the added limitation in its entirety . . . [,] it is clear that the surrendered subject matter has been recaptured."). The Federal Circuit has also explained the policy motivation underlying the third step: "a limitation that is added during prosecution to overcome prior art cannot be entirely eliminated on reissue because doing so would constitute recapture of the surrendered subject matter." *In re Mostafazadeh*, 643 F.3d at 1359.

[CL76] However, a "[v]iolation of the rule against recapture may be avoided . . . if the reissue claims 'materially narrow' the claims relative to the original claims such that full or substantial recapture of the subject matter surrendered during prosecution is avoided." *In re Mostafazadeh*, 643 F.3d at 1358, 1361 ("[T]he narrowing must relate to the subject matter surrendered during the original prosecution (i.e., the applicant cannot recapture the full scope of what was surrendered)."); *see also In re Youman*, 679 F.3d 1335; *N. Am. Container*, 415 F.3d at

1350 (applying recapture rule bar because the narrowing of claims did not relate to the surrendered subject matter).

[CL77] It is undisputed that the reissue claims (*e.g.*, the Asserted Claims) have been narrowed from first and second logical processes to first and second "web browser processes." Google argues that the narrowing does not relate to the surrendered subject matter in violation of the rule against recapture. Plaintiffs respond that narrowing the claims to two "web browser processes" was directly related to the surrendered subject matter. As discussed below, the Court agrees with Plaintiffs, and finds that Google has failed to prove by clear and convincing evidence that the challenged claims violate the rule against recapture.

[CL78] During the prosecution of the original '247 Patent, the examiner rejected the original claims, citing Corthell as disclosing every limitation. FF ¶ 95. In response, the Inventors amended the original claims, adding a "second electronic data processor" to provide physical isolation between the first and second logical processes. FF ¶¶ 96–99. The Inventors explained why the pending claims were no longer anticipated by Corthell. FF ¶ 99. To distinguish Corthell's isolated process and non-isolated processes executing on the same processor, the Inventors claimed a physically isolated first processor and a non-isolated second processor. FF ¶¶ 96–99.

[CL79] This distinction between the '247 Patent claims and the Asserted Claims is evident from the Inventors' attempts to traverse a rejection based on Narin when prosecuting the Asserted Patents. FF ¶ 108–09. The Inventors explained that Narin's "closed process" was not the same "first browser process" in the reissue patent claims because Narin's closed process did not have access to the network. FF ¶ 109. The examiner acknowledged the Inventors' argument that their "first browser process is a web process," but noted the claims did not specify the "claimed browsers are actually web browsers." *Id.* In response to this second rejection, the Inventors

narrowed the term "browser process" to "web browser process" and specified that the "first browser process" is "capable of accessing data of a website via the network." FF ¶ 110. Physical isolation was no more.

[CL80] Dr. Dunsmore explained to the jury that by claiming "web browser processes" in the reissue claims instead of the original "logical processes," the Inventors materially narrowed the reissue claims because they now excluded all types of processes other than "web browser processes." FF ¶ 111. Dr. Dunsmore also explained that this narrowing was directly related to the surrendered subject matter—*i.e.*, a single processor embodiment where the first logical process was isolated from the network but the second logical process was not. *Id.* Thus, the reissue claims, though broader in the sense that they reclaimed a single processor and no longer required isolation, were also materially narrowed from logical processes to web browser processes.

[CL81] Mr. Cioffi also testified that narrowing to web browser processes in reissue was a material narrowing directly related to reclaiming the use of a single processor. FF ¶ 111. Professor Dunsmore also explained that this narrowing was directly related to the surrendered subject matter—a single processor embodiment where the first logical process was isolated from the network, but the second logical process was not. FF ¶ 111.

[CL82] As the Court previously recognized, the invention claimed in the '247 Patent was "isolation" where "the second logical process could access the network [but] the rest of the system could not." FF ¶ 90; CL ¶ 57; (ECF No. 212 at 8). When the Inventors amended the '247 Patent's original claims over Corthell, they added a second electronic processor to provide physical isolation between the first and second logical processes. FF ¶¶ 97, 99. Accordingly, by adding the second physical processor during prosecution of the '247 Patent, the Inventors surrendered the isolation embodiment using a single processor. FF ¶¶ 97, 99.

[CL83] Dr. Dunsmore also explained that the Inventors narrowing of the reissue claims to web browser processes results in the first logical process no longer being isolated because web browser processes must be capable of accessing website data. FF ¶¶ 103, 111. Since the Inventors were no longer claiming isolation of the first logical process from the network, reintroducing single processor claims was not improper recapture because the Inventors directly and materially narrowed the surrendered subject matter to web browser processes.

[CL84] Google's argument that the Inventors surrendered all single processor embodiments over Corthell abstracts the language of the '247 Patent's original claims—without acknowledging that the invention set forth in the originally filed claims of the '247 Patent was directed to a first logical process isolated from the network, executing on at least a single processor. FF ¶ 112. Accordingly, when the Inventors surrendered their single processor embodiment, it was with respect to the isolation embodiment of the invention—not with respect to a single processor full stop. FF ¶¶ 103–11. Since (1) the originally filed claims of the '609 Application (i.e., the '247 Patent) were directed to isolation of a first logical process, and (2) the reissue claims are directed toward a first logical process without isolation (i.e., a first "web browser process), the Court finds that Claim 43 of the '500 Patent and Claim 67 of the '528 Patent are materially narrowed with respect to the surrendered subject matter (i.e., a single processor executing a first, isolated logical process and a second, unisolated logical process).

[CL85] Accordingly, the Court finds Google failed to prove by clear and convincing evidence that the challenged claims violate the rule against recapture under 35 U.S.C. § 251.

III. CONCLUSION

For the reasons set forth above, the Court concludes that Defendants have not shown by clear and convincing evidence that the Asserted Claims are invalid under 35 U.S.C. § 251.

Accordingly, Google's Motion for Post-Trial Relief on Invalidity under 35 U.S.C. § 251 (Dkt. No. 292) is **DENIED**.

So ORDERED and SIGNED this 26th day of August, 2021.

RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE